THE BUILDER

INCORPORATING

"ARCHITECTURE" and "THE BRITISH ARCHITECT"

VOL. CLXXVI JUNE 10, 1949 No. 5547

THIS WEEK'S NEWS

PAGE

A PLAN for the future development of South Wales has been published by H.M. Stationery Office, and simultaneously the Ministry of Town and Country Planning has issued a memorandum commenting on some of the proposals and recommendations. 708

"ISLEDEN HOUSE," an experiment in the housing of the aged poor, carried out at Islington by the Trustees of the London Parochial Charities, to designs by Campbell Jones and Sons, Architects, is described and illustrated. 713

ACCORDING TO A CIRCULAR issued by the Department of Health for Scotland local authorities are to be allowed to begin to build more houses for the general population next year, the present restrictions on the placing of tenders for houses are to be relaxed, and local authorities can now arrange their own programmes of non-traditional houses. 721

THE ANNUAL REPORT of the Quantity Surveyors' Committee, published as an annex to the 81st annual report of the Council of the R.I.C.S., gives details of negotiations that have been conducted with a number of Government Departments and county and local authorities regarding professional fees. 721

A REPORT has been prepared by the Chief Scientific Adviser's Division, M.o.W., on the economic use of large-scale plant for excavating house footings. 722

THE SUGGESTION that a new grade of workman with an expert knowledge of concrete technique is required has been made by Mr. J. Singleton-Green, M.Sc., A.M.I.C.E. 725

THE IMPORTANCE OF RESEARCH in order to achieve first-class quality in building materials was stressed by Mr. R. FitzMaurice, B.Sc., M.Inst.C.E., deputy chief scientific adviser to the Ministry of Works, when he addressed the annual meeting of the British Cast Concrete Federation in London. 726

A DEMONSTRATION OF various types of building plant—ranging from powered hand tools and brick elevators to steel scaffolding and multi-purpose tractors—is to be held in Edinburgh and Glasgow on June 21–23 and June 29, June 30 and July 1, respectively. 727

ALTHOUGH THE PROPOSALS for a new town at Bracknell, Berkshire, are to go ahead, the Minister of Town and Country Planning has reduced the area originally proposed by nearly one-third to exclude some 770 acres of farmland. Additional designation to make up for this loss is being deferred until a plan is available on which precise needs can be assessed. 728

THE VIEW that, despite the limits imposed on the industry at the present time, building resources could be much better deployed than was the case under the Government's present policy was included in some observations on the subject of building costs made by Mr. Nelson J. Lawrance, President, Eastern Federation of Building Trades Employers, at the annual general meeting of the Federation. 728

THE SCHOOL-BUILDING CRISIS

ONE of the sharpest lessons that we have had to learn as a nation since the end of the war is the difference between plans and performance. Hope has been deferred in almost every department of national life—in the nationalised industries, in Town and Country Planning, in housing, in the rebuilding of bombed towns and cities and other instances too numerous to mention. Plans, often admirable in themselves, have failed to be realised because they took no account of the practical possibilities of performance—of the availability of materials and labour under the planned economy which has been forced upon us. It would now appear that to the disappointments already suffered must be added another with regard to education, or at least to the school buildings envisaged by the 1944 Education Act.

Without the advances in standards of accommodation decreed by the Act the position at the end of the war was formidable enough. In addition to the accrued shortage due to the lack of building during the war years, there was an estimated deficit, through enemy action, of 200,000 places. Then the raising of the school-leaving age under the Act meant that accommodation had to be provided for an additional 130,000 pupils by September, 1947, and 260,000 more a year later. Improvisation was inevitable and we are now saddled with a great number of unsuitable hutment-classrooms, which are certainly called temporary, but like most so-called temporary building will probably last a very long time and constitute a hindrance to progress.

But the real problem—a dual one—only now being faced, is to bring the great number of existing school buildings up to the standard required by the Act and to provide the many new buildings needed to implement its provisions. The estimated cost of implementing the Act is said to be roughly about £1,000 millions, an expenditure which under pre-war conditions would have been spread over a period of about thirty years. To-day, with heavy calls upon the services of the building industry in other directions, shortages of labour and materials, and a much lower output, the period might well be much longer. Officially, it is assumed that with an annual expenditure of about £70,000,000. the programme could be completed in fifteen years. This, however, would seem to be no more than an optimistic hope, having little relation to facts and to the general outlook. In 1946, for example, it was found possible to spend only £7,000,000 ; in 1947, no more than £24,000,000, and this as a result of special efforts. The target for this year is £55,000,000, but past history and present conditions make it doubtful whether it will be reached.

There are at least three ways in which progress in school building could be accelerated : (1) the allocation of a much larger proportion of labour and materials for the work ; (2) a considerable increase in output ; (3) the adoption of prefabrication on a much greater scale than at present. With the present great demands on the resources of the building industry, which are likely to continue for many years, no great improvement can be expected under the first head, and unless incentives prove to be more generally successful, it would be unwise to count too much upon the second. Prefabrication, therefore, remains the chief hope of fulfilling the requirements of the Education Act within a reasonable period of time, but in this connection it must not be forgotten that the great majority of existing schools which have to be brought up to standard are of traditional construction and therefore not likely to be readily extensible by prefabricated methods.

To the adoption of prefabrication on a great scale many objections would no doubt be raised. First of all there is the practical objection that layout must be con-

trolled in many cases by site conditions, and it might often be impossible to use prefabricated units without expensive levelling and excavation. Then there are the questions of aesthetics and the character of *locale*. There is, of course, no reason why prefabrication should be aesthetically unsatisfactory, but the most enthusiastic advocates of prefabrication would probably hesitate before setting down exactly the same type of building in, say, Cornwall, the Cotswolds, and East Anglia. If the ideals behind the Education Act are to be realised, then monotony is the first thing to be avoided. We are still left, however, with the uncomfortable fact that school building is behind schedule, with little apparent prospect of catching up, much less of further acceleration, if we continue as at present.

In view of shortages, every kind of suitable material will have to be used for school buildings, but so far as prefabrication is concerned, we are by no means convinced that the possibilities have yet been fully explored. Progress, as Mr. C. G. Stillman, himself a specialist in school-building, suggests in a book reviewed elsewhere in this issue, may well be made with a planning and design technique primarily influenced by the materials most likely to be available, in conformity with certain well-defined principles, enabling the different departments of a school to be treated independently, an open and flexible plan allowing latitude for the use of standardised components as and where considered expedient.

It is becoming more and more apparent that educational ideals will have to be adapted to the available resources and capacity of the building industry. Are our educational authorities fully alive to the position? There seems to be an urgent need for educationists, architects and technicians to get together to decide on the practical steps to be taken to accelerate school building. Otherwise the completion of the programme may have to be deferred to the Greek Kalends.

NOTES AND NEWS

Old People's Homes.

THE adequate housing of the old and poor is a matter much in the public eye. There are at least two reasons for this; first, the economy of space with which old persons may be housed often means that the accommodation they vacate can be taken over by larger families; second, there is the humanitarian aspect which acknowledges that men and women who have entered the evening of their days need and deserve a degree of security and comfort beyond that purchasable with their old age pension which, for the most part, is their sole means of livelihood.

A number of local authorities and voluntary bodies have built or are planning homes for the aged, and already there exists a considerable volume of data on the subject of old people's needs and likes. Authoritative articles have been given in our columns* and a number of buildings illustrated, the latest of which appears in this issue. This scheme, "Isleden House," Islington, is probably the largest and certainly the most imaginative contribution to the subject yet undertaken. It has been sponsored by the Trustees of the London Parochial Charities, whose ideas, and those of their Clerk, Mr. Donald Allen, have been admirably carried out by Mr. Campbell Jones, the architect.

It would not be claimed that this Islington scheme is economic in the sense that it represents a financial investment, or that the high standard of finish and equipment or the available services (which include constant hot water, the most modern kitchen equipment, a communal meals service and a sick bay with qualified matron) would necessarily all be incorporated in normal local authority schemes. In every field of human endeavour, however, it is necessary to have examples of the ideal which can serve as a standard for others, and this example "Isleden House" magnificently sets to all authorities who are concerned with the housing of the needy aged.

A Summer School of Architecture.

THE Academic Development Committee of the York Civic Trust Association has arranged a course of study on architectural history and measured drawing to be held from August 13 to 27. Particular objects of this summer school are to enable students of architecture to make measured drawings of buildings in York under the guidance of a staff of experts and to provide a series of lectures on various aspects of the history of architecture by a number of distinguished architectural historians. Applications to attend the school should be addressed to the Secretary, York Civic Trust (Academic Development Committee), 6, High Petergate, York, together with details of any special qualifications which the selection committee might take into consideration. June 18 is the last day on which applications will be accepted.

**The Builder*, 14, iii, 1947; 9, i, 1948.

York Architectural History.

THOSE who know York recognise it as a real treasure house of fine architectural examples of all periods which have served as inspiration to many Yorkshire architects, not least those fortunate enough to come under the influence of the late Harold E. Henderson, F.R.I.B.A., who directed the architectural classes at the York School of Arts and Crafts shortly before the 1914 war. The suggestion has recently been put forward, among others by Mr. C. W. C. Needham, F.R.I.B.A., M.T.P.I., himself one of Henderson's students, that there should be established in York a special kind of architectural institute to which students could come from architectural schools all over the world, for the first-hand study of English architectural history and the preparation of measured drawings.

This idea has been taken up by the York Civic Trust, and in connection with the Summer School of Architectural History mentioned above, Mr. Needham has offered prizes for the best work on domestic buildings produced during the Summer School. This generous offer has been accepted by the York Civic Trust, and should be a great encouragement to the students. No doubt others interested in the study and design of other types of building or in particular crafts such as wrought-iron-work, plasterwork or woodwork will wish to follow Mr. Needham's example and offer prizes. It may well be that out of this Summer School may come the York Institute of Architectural History.

Award of Albert Medal.

THE gold Albert Medal of the Royal Society of Arts for 1949 has been awarded, with the approval of H.R.H. the Princess Elizabeth, President of the Society, to Sir Giles Gilbert Scott, O.M., R.A., P-P.R.I.B.A., as "builder of a lasting heritage for Britain." Sir Giles has been responsible for the planning of many important works throughout the country, including Liverpool Cathedral, the new Library at Cambridge University, Waterloo Bridge, additions to Magdalen College and extensions to the Bodleian Library, Oxford, the new Chapel at Charterhouse School, restoration at Chester Cathedral and the rebuilding of the House of Commons, as well as many churches and war memorials.

The Medal will be presented by H.R.H. the President when she visits the Society's House on Monday, July 11.

Sir Giles Gilbert Scott is the second architect to receive the Medal, it having been awarded to Sir Aston Webb in 1927.

Chicago Institute of Design.

THE Council of Industrial Design have secured on loan from the Chicago Institute of Design an Exhibition which demonstrates the principles and methods of instruction employed in this school for the training of designers, whose principal is now Mr. Serge Chermayeff, F.R.I.B.A. The exhibition—at Murray House, adjoining Tilbury House, Petty France, S.W.1—will be opened at 11 a.m. on June 28 by Mr. Robin Darwin, Principal of the Royal College of Art. It will remain open until July 29 (10 a.m.-5 p.m., Saturdays 10 a.m.-noon). All interested in the subject of industrial design, and particularly those concerned with the training of Britain's future designers, will have an unusual opportunity of studying methods of design training employed in the U.S.A. Diagrams and photographs will illustrate the Institute's methods of teaching in workshop practice, sculpture and modelling, photography and film, architecture, graphic design (advertising, arts, typography and display) and product design for furniture, ceramics, plastics, cast and hand-worked silver, radio and lighting equipment.

Deputy City Architect, Liverpool.

FROM an original list of 24 candidates for the post of Deputy City Architect for Liverpool, which carries a salary of £1,500, rising by annual increments of £100 to £2,000 a year, the Corporation Chief Officers' Appointments Committee has selected the following for interview and final selection on June 20:—Joseph W. Adamson (aged 45), City Housing Architect, Belfast; Herbert J. Knowles (46), County Architect, Berkshire County Council; John Patterson (42), Deputy Chief Architect, Department of Health for Scotland; S. C. B. Roberts (39), Deputy City Architect, Manchester; Alfred L. Spencer (35), Senior Architect, Ministry of Works, London; and Leonard Whitaker (40), Senior Architect, Ministry of Health.

Markelius and the New Architecture.

THE Swedish architect, Sven Markelius, took the opportunity afforded by the presentation to him on May 10 of the Howland Medal of Yale University to outline his thoughts on the course of the new Swedish architecture. "The radical change of architectural forms in Europe in the 1920's," Mr. Markelius explained, "was the consequence of a new comprehension of the social task of building. The aspiration for a new shape, where the content and function, the construction and material are shown in the outside form of things, gives expression to the social tendency to remove the class distinctions and lift the standard of environment for those neglected groups of people." National planning, in Markelius's view, must be considered for every planning project within the individual municipalities and their regions, and he cited as an example that appropriate size of the community should be taken into consideration, not only with regard to local interests but also the interests of the entire country. "With the change in the concept of the responsibility of the public for the effectiveness of the industrial life and for public housing needs, the planning of building development has been enlarged to a technical-economic and social-political problem," he continued, adding that it was a whole complex of sociological and political considerations that must influence large-scale planning.

Architecture, he concluded, must be "functional, rational and human. It has to be pitched at the level of the technical development of our time and must be an expression of the time. More important, it must give a practical solution to all the urgent needs that people are waiting for."

Visitors from Austria.

THREE Austrian Government officials concerned with safety precautions in public building recently visited Britain to see the arrangements made in this country. They were: Herr Senatsrat, Dipl. Ing. Fritz Torggler, who is Principal of Technische Theater und Kinopolizei, a municipal cinema safety and structures inspectorate; Herr Architekt Alfred Riese, an architect in the Public Safety Department of the Vienna Municipality; and Herr Dipl. Architekt Robert Kotas, architect to "KIBA," the sole cinema concern in Austria under the direction of the Vienna municipality, and responsible for construction and reconstruction of all cinemas belonging to this concern.

The British Council had organised visits to the Home Office, the London County Council, Middlesex County Council, Brighton and Birmingham. Particular aspects which interested them were exits and entrances, fire precautions and building regulations.

Quarrying in Devon.

THE threatened destruction by quarrying of Berry Head, Devon, has been averted by a decision of the Minister of Town and Country Planning to limit future quarrying there.

The Minister, after reaching full agreement with the Ministry of Transport, the local planning authorities and the companies concerned, has granted permission for limited quarrying, which will work in from the sea and leave the headland itself relatively unaffected. He has also imposed conditions to ensure dust control and that all waste material will be disposed of within the excavation, and levelled off; also all plant, buildings and machinery will be removed as and when they are no longer required. This limited extension has been allowed, as the present difficulties in supplying limestone for essential purposes are serious. The Minister considers that investigations of possible alternative sources of supply in areas of less amenity and recreational value than Berry Head should be carried out in the intervening period.

Professional Announcement.

MESSRS. HARRIS AND PORTER, chartered quantity surveyors, as from Tuesday, June 7, have opened a Portsmouth office in conjunction with their Newport, Isle of Wight, office, at 103, Palmerston-road, Southsea, under the management of Mr. M. A. Nitsch, F.R.I.C.S.

COMING EVENTS

Monday, June 13.

ROYAL SOCIETY OF ARTS.—Exhibition of models, pictures and personal relics of Joseph Bramah, engineer and inventor. R.S.A., John Adam-street, Adelphi, W.C.2. Continuing until June 25.

COUNCIL FOR VISUAL EDUCATION.—A.G.M. and talk by the Hon. Lionel Brett, M.A., A.R.I.B.A., on "Looking at Buildings." 13, Suffolk-street, S.W.1. 2.45 p.m.

Wednesday, June 15.

HOUSING CENTRE TRUST.—Sir Lancelot Keay, K.B.E., P-P.R.I.B.A., to open exhibition on the "Appearance of Housing Estates." 13, Suffolk-street, Haymarket, S.W.1. 4.30 p.m.

WEST RIDING TIMBER TRADES ASSOCIATION.—Conference of West Riding Timber Consumers. Hotel Metropole, Leeds. 2.30 p.m.

Thursday, June 16.

MINISTRY OF WORKS.—Opening of exhibition on prestressed concrete. Jubilee Works, Sherlock-street, Pershore-street, Birmingham. Continuing until June 27.

Friday, June 17.

ARCHITECTS' REGISTRATION COUNCIL OF THE UNITED KINGDOM.—Meeting of Council. 66, Portland-place, W.1. 2 p.m.

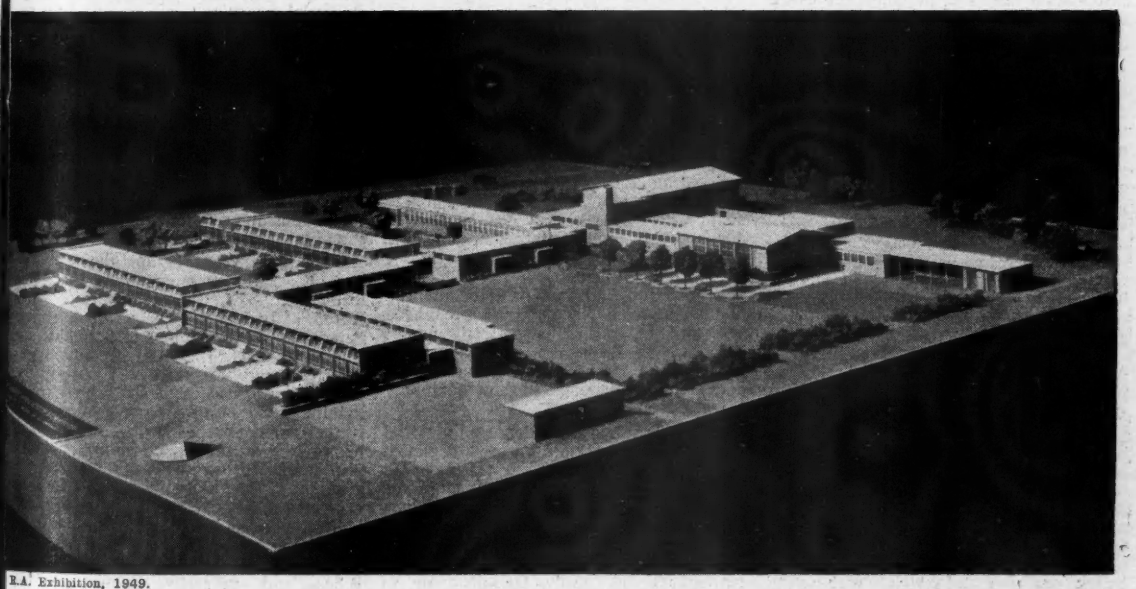
Saturday, June 18.

INSTITUTE OF QUANTITY SURVEYORS.—Annual General Meeting. Caxton Hall, Westminster, S.W.1. 2.30 p.m.

FROM "THE BUILDER" OF 1849

Saturday, June 9, 1849.

THE METROPOLITAN ROADS.—The twenty-third report of the Commissioners of the Metropolitan Roads states that the receipts from tolls during the past year amounted to 64,019*l.* and the total receipt from all sources of income, including the balance in hand on the 25th March, 1848, to 71,036*l.* The total concurrent expenditure amounted to 68,773*l.*, including the interest and the instalment of the mortgage debt. The state of the roads on Sunday last, at the west end of the metropolis, for want of water, was abominable. Why health and property should not be protected on a Sunday as on another day, it seems hard to say.



R.A. Exhibition, 1949.

RAMSGATE MANSTON-ROAD COUNTY PRIMARY SCHOOL, for the Kent Education Committee.
Howard V. Lobb, F.R.I.B.A., Architect, in collaboration with Sidney Loweth, F.S.A., F.R.I.B.A., Kent County Architect.

The Measurement of Natural Lighting

Some Comments upon an Official Publication

By PERCY J. WALDRAM, F.R.I.C.S.

A VERY important feature of town planning—to many the most important—is the extent to which in future the accommodation which may be planned upon urban sites must be restricted by limitations placed on permissible obstruction to light and air.

The aggregate value of the property interests thus involved is colossal, and they are public as well as private, for rateable values depend upon the volume of permissible accommodation. It is, therefore, indeed strange to find that in an official booklet advising local authorities how to frame drafts of urban town planning schemes[1] the Ministry of Town and Country Planning should have recommended that the question as to whether the drawings of a given proposed building would or would not comply with given restrictions should be tested by a new method which has been criticised as being so inaccurate as to tend in many cases to legalise the very obstructions which it is desired to prevent.[2, 3]

Later on in the same booklet (p. 99) local authorities are certainly recommended to dispense with the new method in cases where they are satisfied that the legality of a proposed building has been tested by "the Waldram diagram or other scientific method." This, however, is even more strange; because, as will be shown later, another Government Department has actively discouraged, and even prevented, architects from using the diagram named.

The following article is an attempt to enable those who may desire to do so to implement the Ministry's advice by setting out for themselves the recommended diagram, or purchasing it ready for use.

Windows as Efficient Lighting Agents.

When, in 1939, all building not required for war purposes stopped abruptly, architects had already long afforded no small justification for the popular impression that they had completely forgotten how to design windows as efficient lighting agents. Architectural literature might be searched in vain for any guidance as to the dimensions or proportions of windows which make for the effective natural lighting of the interiors which they serve. One could perhaps find an analysis of the divergent views of different authorities as to the most aesthetic relation of voids to solids in a given elevation, but not even a mention of such obvious facts as that the upper parts of windows were the most valuable; or that even excessive width can never make up for inadequate height. Had efficient fenestration been an architectural crime it could scarcely have been more studiously avoided.

Even the ruling trend in architectural fashion endeavoured to render façades interesting by the introduction of wide shallow windows, whose unduly low heads kept interiors in perpetual gloom even when facing open fields bathed in sunshine.

The design of windows for efficiency had not always been at such a low ebb. Many generations before, architects had amply proved themselves to be masters of efficient fenestration, no less than of other structural features. They had evolved—possibly by trial and error and certainly without any assistance from scientists—a type of window of such excellent proportions that not only do they add charm and even beauty to uninspiring façades, but they constitute to this day our best example of really scientific fenestration; not only giving interiors which are always bright and cheerful, but also the highest possible ratio of daylight factor value per square foot of glass provided.

No matter whether we be architects, lighting engineers, scientists or merely ordinary householders, whenever we need obvious examples of what to strive for in the fenestration of post-war buildings we turn instinctively and without hesitation to the eighteenth-century buildings which still remain to us. These, however, were designed mainly under the patronage of large landowners, to whom a knowledge of the principles of good architecture and good town planning was an essential fashionable accomplishment; and who were in a position to insist, and did insist, that any buildings on their land should courteously refrain from unduly obstructing the light and air of neighbours.

In later years, many urban estates of well-planned dwellings were gradually sold off to individual owners, who were always open to the temptation of so rebuilding as to crowd more rental value on to their sites. All too soon, the absence of any effective town planning restriction on undue obstruction left the most efficient window at the mercy of any selfish neighbour, unless it were lucky enough to be protected by legal rights of light.

It is scarcely surprising that architects should have come to regard efficient fenestration as a waste of time, and to have designed windows only for their appearance, even for nearly two centuries. They have not, however, been entirely idle. The modern technique of measuring, predetermining and representing the natural lighting of obstructed urban interiors which the Courts have found invaluable, and which has been adopted officially not only in this country, but internationally, had been wholly evolved by an architect.

Legal Rights of Light.

For many years before the 1914-18 war the technical evidence given in the Courts in numerous actions over legal rights of light had consisted of general opinions by eminent architects and surveyors as to adequacy or the reverse, unsupported by specific facts. These opinions were often so contradictory as to puzzle and even exasperate judges, who were unwilling to assume deliberate perjury on the part of distinguished professional men, but were quite unable (like everyone else, including the witnesses themselves) to understand how powerfully judgment as to the intensity of daylight can be unconsciously prejudiced and misled. In fact, a perfectly honest account of the impressions of even a skilled observer can, on occasion, be quite different from the experiences of those habitually using a room.

The substitution of evidence on material facts, capable of being measured, depicted, agreed and compared with the recorded tested "grumble point" of a consensus of reasonable people, was warmly welcomed by lawyers. It also materially reduced the volume of somewhat unsavoury litigation. Property owners, duly advised, neither care to embark on costly lawsuits nor to proceed with them when once the facts legally material become obvious to both sides and agreed settlement is thereby rendered possible. In consequence many "ancient light" cases were settled amicably, and the number of those expensively fought to a finish in the Courts dropped to a mere fraction. Architects must not expect, on the strength of this small achievement, to be able now to sit back and idly await some magical formula from the scientists which will enable them to attain effortless perfection in fenestration. No such easy short cut is likely, or even possible. It is by no means enough merely to be able to secure adequate illumination for specific tasks. Efficient fenestration is an art as well as a science. The windows designed by our architectural forefathers give us interiors which are not only adequately lighted but also consistently cheerful and pleasing in all weathers. Such amenities can only result from meticulously careful attention having been given by the designer to a number of subtle and apparently unimportant details of lighting. It is idle to expect them from the comprehensive objective arithmetic of modern science. Architects must strive assiduously to recover the lost art, with such assistance as modern science can give them.

Even with regard to the simple problem of providing adequate daylight factor values, the dicta of official scientists have up to the present not been conspicuously successful.

The obviously extravagant recommendations of the D.S.I.R. Building Research Board in the direction of effecting a quite unnecessary and possibly dangerous increase in the well proven pre-war standard of the intensity of natural light in school classrooms have been either drastically reduced or completely ignored by the Ministry of Education. Even the reduced increases have proved impracticable and we are informed officially that the subject is now being reconsidered in conjunction with the Medical Research Council.[4]

Official Publications.

Official publications during and since the war, dealing with various aspects of natural lighting, scientific fenestration and the like, have by no means escaped severe criticism in the technical Press. Attention has been drawn to grave and obvious inaccuracies in official theory and data compiled for the assistance of architects. Such criticisms have either been disregarded or, what is even more eloquent, condoned on the ground that they are merely well-meaning suggestions. Actually, of course, the truth is that recommendations from exalted sources, even when not obligatory, carry so much weight that they will inevitably be regarded as official instructions, both by local authorities drafting town planning regulations and restrictions and by officials examining them for approval or rejection.

For many years before the war the D.S.I.R. had recommended the new technique. Their official report (Ill. Research. Technical Paper No. 7. The Penetration of Daylight and Sunlight into Buildings. H.M.S.O.) had advocated, described and illustrated the use of the principal tool used by experts in natural lighting. This was a simple alternative to the familiar flat projection on plan of a hemisphere of angular co-ordinates which was published on the Continent shortly after the death of Lambert in 1777, as a geometrical tool for implementing his well known "Cosine Law" of the illumination from luminous surfaces. This alternative, devised by the writer's son, J. M. Waldram, B.Sc., and generally known as the "Waldram Diagram," was rectangular and very easy to set out. It was also more convenient than its classic prototype

because projections upon it of the aspect of obstructed windows are far more natural, so that errors can more readily be spotted.

The proceedings of the Illuminating Engineering Society in which this diagram was first published[5] having been long out of print, Technical Paper No. 7, which ran into two editions, constituted a convenient text book, and rendered unnecessary any other guide to the new technique and the diagram which is essential to its use.

Requirements of the Planning Acts.

During the war it became obvious that considerable restrictions of the degree of obstruction hitherto permissible would have to be enforced by town planning on the vast accumulations of overdue post-war building and rebuilding if the requirements of the 1932 and later Acts, insisting that adequate light and air should be left to all actual and potential neighbours, were to be complied with. Different Government departments therefore took timely steps to qualify for any new responsibilities which might be laid on them for defining and administering such restrictions. These generally took the form of attempts to extend and simplify the technique which had been devised to assist the administration of the law of private rights of light. Several approximate alternatives were devised and recommended in official publications to take the place of the Waldram diagram, which was incorrectly supposed, by those without sufficient experience of its use, to involve an undue amount of tedious labour.

Unfortunately, these alternatives were either too difficult to apply, so approximate or so limited in scope, as to be of little or no practical use. When, therefore, H.M.S.O. suddenly ceased to publish Technical Paper No. 7, the existing technique was left at a serious disadvantage, with no published directions for setting out its basic diagram; and those desirous of applying it to problems in fenestration and town planning were left with no option but to adopt one or other of the suggested alternatives. This monopoly was rendered more complete by an officially approved article in the *Journal* R.I.B.A.[6] describing a new indirect system of restricting urban obstruction under town planning which has now been recommended to all local authorities. This article, although describing itself as being merely a study, is now cited in the Ministry book as constituting the official description of the new system of indirect restriction. It purported to represent the Waldram diagram, but did so in a particularly intricate special form devised by the writer some years ago with the sole object of correcting for the very small or negligible loss of light through clean window glass.

A subsequent protest in the *Journal* R.I.B.A.[7] that this misrepresentation of the diagram served no useful purpose, but rather added to inaccuracy, was ignored. This left the very definite impression that for problems in fenestration and town planning hitherto soluble with the aid of the very simple Waldram diagram, it is essential to use an obsolete measuring diagram, impossibly difficult to set out, instead of the ordinary simple form which can easily be set out by any intelligent schoolboy.

There can be no reasonable doubt that the measuring diagram which the Ministry intended to recommend to local authorities as a permissible alternative to the method officially recommended was the simple rectangular form which the D.S.I.R. had advocated for some years, and which had been in common use by experts before the war. On the other hand, the B.R.S. could not have been unaware that this was seriously misrepresented in the article published with their specific approval in the *Journal* R.I.B.A. by applying the title to a distorted obsolete special form, which was not only far too intricate to be set out by any busy architect, but was copyright and stated to have been reproduced by permission of the writer. It is unfortunate that when this permission was requested, and promptly granted, no information was given as to the purpose of the reproduction. The authorities must also have known, when withdrawing Technical Paper No. 7 from publication, that it constituted the only available description of the simple method whereby architects could set out the recommended measuring diagram; and their silence with regard to the writer's published objection to the effect of the misrepresentation cannot be ignored.

It is obviously undesirable that there should be any doubt or ambiguity with regard to official recommendations respecting restrictions upon the rebuilding of urban properties, and as the writer has been given permission to reprint any part of Technical Paper No. 7 it is considered to be in the public interest to publish at least the following description from it of the method of setting out the diagram.

Construction of the Waldram Diagram.

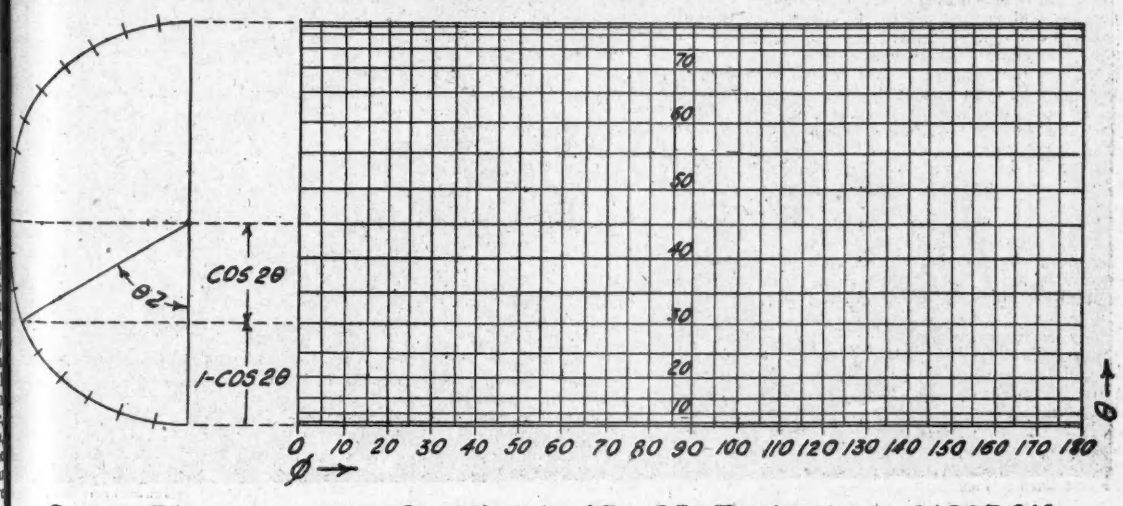
Any two small areas of sky at the same altitude above the horizon but at different azimuths or angles of bearing produce equal illuminations on a horizontal plane. The azimuth scale ϕ is therefore linear. If the total length of the diagram be, for example, 20 in. then $1° = \frac{20}{180} = \frac{1}{9}$ in. The scale of altitude is, however, not linear, since on the one hand the area bounded by unit increments of altitude and azimuth decreases as the zenith or nadir is approached. On the other hand the illumination given on a horizontal plane at the centre by unit area of spherical surface increases as the zenith is approached. It may easily be shown, by simple calculation, that to correct for these effects the scale of elevation (Θ) should be so constructed that the distance from the base of the diagram corresponding to an angle of elevation (Θ) should be proportional to 1-cos 2Θ.

The scale of 1-cos 2Θ may be constructed from a table of trigonometrical values or alternatively by the simple geometrical construction shown. Having chosen the total length of the scale of elevation (e.g., 10 in.), describe a semi-circle upon a vertical line of this length and divide it into equal arcs, each corresponding to *twice* the smallest difference of angle it is desired to represent. As shown this difference is 10° and the semicircle is therefore divided into 9 arcs each of 20°. From each of these points of division draw a horizontal line and the desired scale is produced.

It is not possible within the scope of a short article to reproduce from Technical Paper No. 7 a full description of the diagram and especially of a device known as "droop lines" by means of which its application is greatly facilitated. Arrangements have therefore been made with Messrs. Batsford to publish this information in a small pamphlet together with full-size, true-to-scale copies of the diagram, complete with droop lines, ready for use.

REFERENCES.

1 "The Redevelopment of Central Areas." Ministry of Town and Country Planning, 1947 H.M.S.O. 12s. 6d.
2 *The Builder*, August 20, 1948, page 218.
3 *The Builder*, September 3, 1948, page 278.
4 *Journal* R.I.B.A., Vol. 55, No. 1, November, 1947.
5 Waldram, P. J. and J. M. "Window Design and the Measurement and Predetermination of Daylight Illumination." Ill. Eng., 1923, 16, 40.
6 *Journal* R.I.B.A., Vol. 54, No. 11, August, 1947.
7 *Journal* R.I.B.A., Vol. 54, No. 12, September, 1947, 569.



GEOMETRICAL CONSTRUCTION OF RECTANGULAR DIAGRAM

DEVELOPMENT OF SOUTH WALES

Official Comments on Consultants' Plan

A PLAN for the future development of South Wales has now been published by H.M. Stationery Office, and the Ministry of Town and Country Planning has simultaneously issued a memorandum commenting on some of the proposals in the plan.

The plan for the South Wales Development Area is the work of Mr. T. Alwyn Lloyd, F.R.I.B.A., P-P.T.P.I., and Mr. Herbert Jackson, F.R.I.B.A., A.M.T.P.I., who were appointed joint consultants by the Minister of Town and Country Planning. It does not in itself represent the views of the Government, but many of its recommendations will serve as valuable guides to local planning authorities, although some may, as pointed out in the Ministry's memorandum, need reconsideration in the light of information which has become available since the plan was submitted.

COMMUNITIES IN MINING VALLEYS: The consultants lay particular stress on the need to maintain vital communities in the mining valleys, but they consider many improvements can be brought to the South Wales of the future. They want a rectification of the errors which occurred in the past, when there was hasty unplanned construction during periods of intensive mining operations, with all the consequences of destruction of scenery and houses damaged by subsidence; and they call for a realisation of the fact that a balance must be achieved between the coal, steel and tin-plate, oil, chemical, glass and asbestos industries and other land users.

CONSIDERATION FOR AGRICULTURE: Special consideration for agriculture is recommended, and, except in coalfields and other heavily industrialised districts, the consultants point out that good farming land must be retained wherever possible. In this connection they explain that excellent farming land is to be found in the immediate vicinity of Cardiff and Newport, and this consideration alone provides a strong case for green belts.

POPULATION FIGURES: In outlining their housing proposals, the consultants use as a basis for calculation a future potential population for the region of 1,926,500. This figure is arrived at by assessing the number of persons who could be accommodated at reasonable standards in the space available. On the same basis, the figures for the main urban centres will be:—

Cardiff District, Penarth and Barry	353,340
Swansea District and Gower	287,123
Rhondda Valleys and Llantrisant ...	145,488
Newport and Risca District	130,520

The actual figures of the population at the time the plan was drawn up were:—

For the whole region...	1,656,566
Cardiff District, Penarth and Barry	318,992
Swansea District and Gower ...	212,521
Rhondda Valleys and Llantrisant	135,316
Newport and Risca District ...	136,512

NEW TOWNS AND MAIN EXPANSIONS: In order to meet demands for housing, the consultants advocate concentration at certain places rather than piecemeal expansion of existing towns. They therefore propose the building of a new township at Mynydd-Islwyn and considerable expansions of Cwmbran, Llantrisant, Tonyrefail and near Bridgend. The main areas recommended for providing new neighbourhoods for housing the people of Cardiff are between Dinas Powis and Penarth, between St. Fagans and Llantrisant-road, north of Radyr and at St. Mellons. Where new factories are proposed on the outskirts of towns, the consultants stress the need for providing adequate social facilities.

MOTORWAY AND INTERNATIONAL AIRPORT: South Wales Motorway from the proposed Severn Bridge—at least as far west as Bridgend—and a by-pass running north of Newport are among the proposals for improving communications. The railway and bus systems are regarded as being generally adequate, although closer co-ordination of the two and some increase in electrification are recommended. Development of an international airport at Llandow, with suitable provision for safeguarding the historic town of Llantwit Major, and the construction of a pedestrian and cycle-way along the disused Nant-Garw-Coryton Railway are also proposed.

ENCOURAGEMENT OF TOURIST TRAFFIC: The need to encourage tourist traffic to South Wales is stressed, and it is suggested that the proposed National Park area should include the Usk Valley, and regional parks are considered necessary in the Monmouthshire, East Glamorgan, Mid-Glamorgan, Neath and Swansea Valleys. Porthcawl, it is thought, must be allowed to grow as a well-designed seaside town, but strict planning control should be exercised over the South Glamorgan coast-line, while there will be a need for tidying up the areas of temporary bungalows and shacks at such places as Southerndown and Ogmore-on-Sea. A map shows in detail the consultants' proposals for preserving the natural beauties of the whole region.

Attention is called to the need for providing more playing fields, particularly in the mining valleys, where it is pointed out that there is insufficient provision for the leisure of those between the ages of 16 and 25.

POPULATION FIGURES IN QUESTION: One of the main respects in which the consultants' plan and the Ministry's memorandum show a difference of approach to the problems arising is that of the potential population of the region in the near future. Instead of the consultants' figure of 1,926,500, which is based, not on anticipated increases, but on the number which could conveniently be housed in the region, the memorandum suggests a figure of 1,785,000 for the population in 1962 as a basis on which local authorities should plan.

R.A. Exhibition, 1949. Drawn by P. D. Hepwor

BRITISH CEMETERY AT BAYEUX, FRANCE. Philip D. Hepworth, F.R.I.B.A., Architect.

Ministry's New Towns Proposals.

As regards new towns, the memorandum points out that the Minister has already consulted the local authorities concerned about a project for a new town for some 30,000 people at Cwmbran, and it is thought there may be another suitable site for a new town near Church Village, provided investigations show that the danger of subsidence can be reduced to acceptable proportions. On the other hand, the comment in the memorandum on the proposal to build a new town in the Pontllanfraith District is "that it is questionable whether the industrial prospects of the area are sufficient to justify an expansion of the order proposed by the consultants."

It is considered by the Ministry of Town and Country Planning that the consultants' plan for merging Nelson, Treharris and Trelewis may not be practicable, owing to the fact that a new pit may be sunk in the neighbourhood, and the proposal to increase the population of Bridgend as much as is proposed may be objected to on the grounds that this might cause undue encroachment on good agricultural land, and on the coal outcrop north of Bridgend.

TRANSPORT PROPOSALS: A summary of the main proposals made by the Ministry of Transport for the road pattern of South Wales is given in the memorandum. These include a new road for traffic between London and South Wales from east of Calne to Crick, running south-west of Chepstow, and including a bridge over the Severn, between Aust and Beachley, and a bridge over the Wye; a motorway between Bristol and Birmingham, which could connect with the new Severn Bridge route at Almondsbury; and a trunk road by-pass for east-west traffic near Cardiff.

NEW INDUSTRIAL PROJECTS: Attention is also called in the memorandum to certain industrial projects which have been further advanced than they were at the time when the outline plan was drawn up. Such are the general intentions that new pits will be found towards the southern end of the coalfield, and approval of projects to erect new coke ovens and blast furnaces and a cold reduction plant at Margam, and a cold reduction mill and tin-plate finishing plant at Trestre.

In summarising the new information available, the Ministry's memorandum states that "the Minister attaches great value to the careful and comprehensive study of the many problems involved, contained in the plan," but it is also pointed out that it may be necessary "to re-examine in the light of later information the basic assumptions on which proposals in the plan are based."

BOOKS RECEIVED

THE FREEDOM OF NECESSITY. By J. D. Bernal, M.A., F.R.S. (London: Routledge and Kegan Paul, Ltd.) Price 18s.

DESIGN AND CONSTRUCTION OF REINFORCED CONCRETE BRIDGES. By A. W. Legat, G. Dunn and W. A. Fairhurst. (London: Concrete Publications, Ltd.) Price 30s.

ARCHITECTURAL DRAWING FOR THE BUILDING TRADES. By J. E. Kenney and John P. McGrail. (London: McGraw-Hill Publishing Co., Ltd.) Price 18s.

HOME TIMBER PRODUCTION. By R. Meiggs. (London: Crosby Lockwood and Son Ltd.) Price 15s.

*** Books reviewed in these columns may be obtained on application to the Publisher, "The Builder," 4, Catherine-street, Aldwych, W.C.2 Cash should accompany the order.*

BOOK REVIEWS

THE SURVEY OF LONDON: VOL. XXI: TOTTENHAM COURT ROAD AND NEIGHBOURHOOD: (PARISH OF ST. PANCRAS, PART III.). Edited by J. R. Howard Roberts and Walter H. Godfrey. London County Council. Pp. xix, 176, illustrated. 50s. net.

THE appearance of a new volume in this handsome and valuable series is welcome after a long interval due to the war, the previous volume having been published in 1939. Work had to be suspended for many years, and during the interval great damage has been suffered from air raids, almost the last "incident" of the kind in London being the complete destruction of Whitfield's Chapel in Tottenham Court-road by a flying bomb on March 25, 1945. The area dealt with, extending from Oxford-street at the southern tip to Park Village on the north, comprises the southern and western parts of the Borough of St. Pancras. It includes University College, Euston Station (both admirably treated by Mr. John Summerson), Fitzroy-square, Cumberland Market, the Catholic Apostolic Church in Gordon-square, the western part of Bloomsbury, and all the vague Bohemian district west of Tottenham Court-road—now deplorably shabby, but once so popular with artists, scholars and literary folk that it came to be known as "London's Latin Quarter." Among the hundreds, perhaps thousands, of notabilities here recorded as having lived in the district since it was developed 150 years ago, no mention is made of George Gissing, who has portrayed Charlotte-street and its inhabitants at their dingiest; but perhaps he could not be called a "famous resident."

Because 1714 is the limit of date covered by the Historical Monuments Commission, not a single building in the area is mentioned in the Commission's "West London" volume. Tottenham Court-road in 1714 was a country lane, and "Tottenhall" manor house (which gave the street its name) was a gabled and moated Elizabethan building that stood at the present junction of that busy thoroughfare with Euston-road. Many readers will also recall a small farmhouse that used to stand behind Messrs. Heal's premises in Tottenham Court-road, before its demolition in 1917. On a map of 1803, reproduced in the book under review, there are no public or commercial buildings to interrupt the crowded mass of houses and shops and gardens, except Whitfield's Tabernacle, a few small churches, and a little theatre on the site of the present Scala Theatre. Building along Tottenham Court-road began about 1720, and the whole area was developed in rather more than a century. During the past 50 years its character has changed greatly, and only a small part of the district can now be regarded as residentially desirable. Percy-street, Charlotte-street and Maple-street were built between 1764-78. Fitzroy-square (east and south sides) was built by the Brothers Adam in 1792-98, the north and west sides in 1827-35. Gower-street was begun in 1789, but not finished till 1819. Gordon-square, Tavistock-square and the surrounding streets were laid out by Thomas Cubitt and James Burton during the first quarter of the 19th century, and the delightful little shops and houses in Woburn-walk were erected in 1822. The quaint stucco houses in Park Village, part of John Nash's development of the Regent's Park area, mostly date from 1824. Many of them were destroyed in the air raids, others had previously been demolished to allow of railway widening. Munster-square, Clarence-gardens and Cumberland Market are being covered with new blocks of flats; and the branch of the canal that used to feed the "Regent's Basin," together with the Basin itself, has ceased to exist. With all these changes, whether due to war damage or to other causes, there is the greater need for this record of the buildings of the area, and many of them merit notice for their scholarly if sometimes pedestrian design.

M. S. B.

THE MODERN SCHOOL. By C. G. Stillman and R. Castle Cleary. London: The Architectural Press. Price 21s. net.

THE Butler Education Act of 1944, with its revolutionary approach to education, has profoundly affected the design of school buildings. The need for an up-to-date book on the subject is well met by the one under notice. In nine chapters, entitled Historical Background, The Education Act, The Problem, Environment, The Classroom Unit, Special Instruction Rooms, Communal Rooms, Physical Education, and Constructional Design, the many new problems of design, construction and equipment are authoritatively dealt with. One is left, however, with the impression that implementation, within a reasonable period of time, of the full structural requirements of the Act, is doubtful. Here, as in many other spheres of activity, legislation has outrun the practical possibilities of fulfilment. The chief difficulties, of course, are shortages of labour and materials.

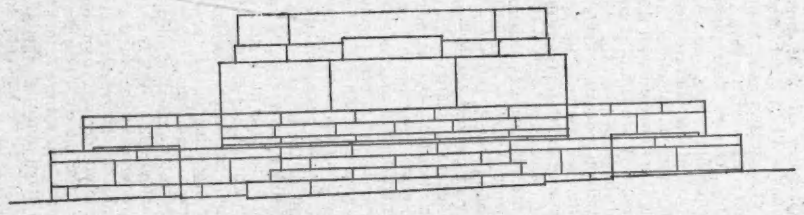
"Educationists," write the authors, "have planned their educational system with disregard of these practical considerations. Whilst, of course, they are aware of such shortages of supply as are common knowledge, they have not apparently realised their possible effects on education—the possibility, for example, that the entire educational system may need revision and modification to bring it into accord with the economic situation. A moderate estimate of the cost of implementing the 1944 Act is 1,000 million pounds. This represents the difference between the standard of existing accommodation and the standard declared necessary under the Act, to enable the advances of educational theory and ideology to be put into practice. Much of this work will be in the nature of bringing old and obsolete premises up to the modern standard—work which cannot be assisted by standardisation." Normally this programme would require a minimum period of about 30 years to carry out. Under present conditions, it is stated, the time might easily be doubled. The question, therefore, is, can we wait possibly for 60 years for the complete fulfilment of the improvements projected by the Butler Act? Clearly some hard, quick and decisive thinking needs to be done by all concerned—the Ministry of Education, architects, technicians and building organisations—if the Act is not to become a dead letter.

The book is well illustrated by plans and photographs. All the snags in design are noted by the authors, who give much valuable information on a multitude of points, derived from long specialisation in the subject. One drawback of the modern one-storey school which is manifest from some of the illustrations in this book is its tendency to sprawl, and therefore to occupy far too much ground. We shall probably have to return to the multi-storey building, whatever its disadvantages.

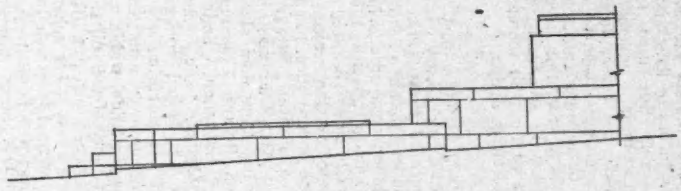
G. J. H.

THE ROYAL ARTILLERY MEMORIAL · HYDE PARK CORNER

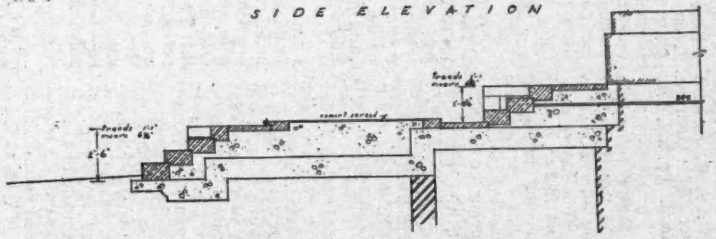
HALF INCH SCALE STONEWORK DETAILS OF ADDITION



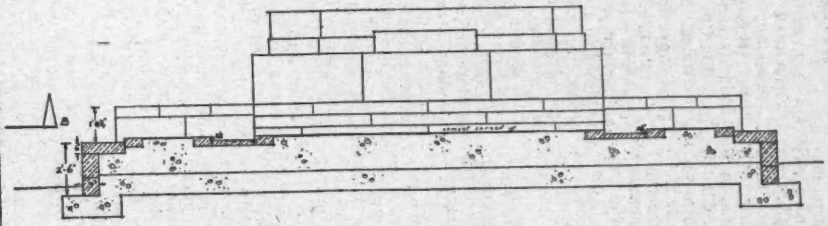
FRONT ELEVATION



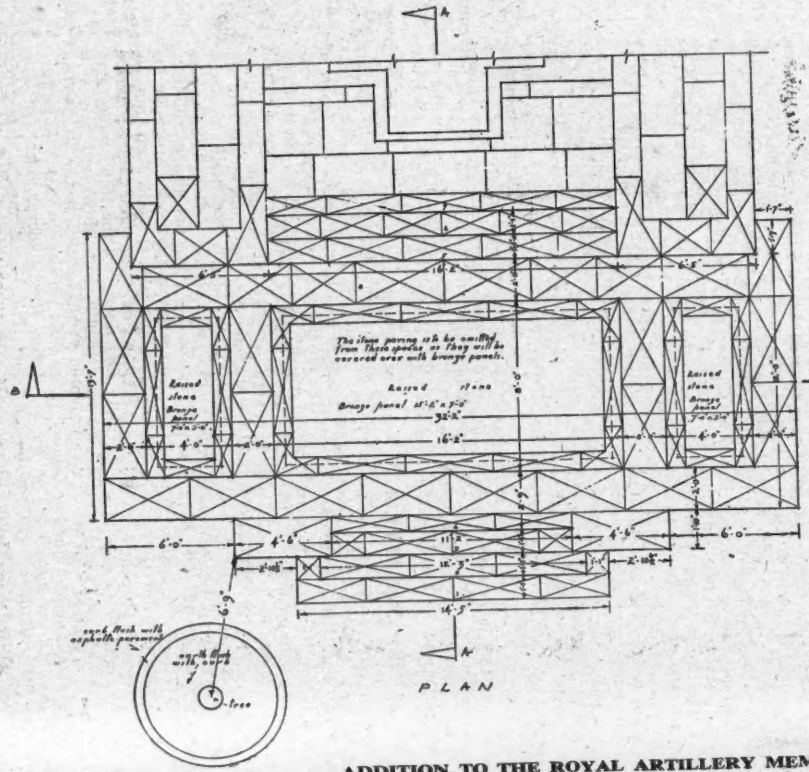
SIDE ELEVATION



SECTION A-A



SECTION B-B



PLAN

DRAWING No 2.

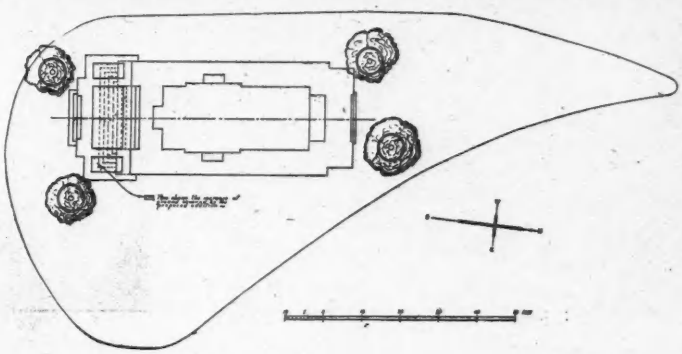
GRASSHILL STONE & BUILDING CO. LTD.
VICTOR HOUSE, CHANCEL STREET
SEPTEMBER 19TH 1946 W.C.1.

ADDITION TO THE ROYAL ARTILLERY MEMORIAL, HYDE PARK CORNER. Half-inch details.

Bird's-eye view of opening ceremony. In the background is the Quadriga.

ROYAL ARTILLERY MEMORIAL, HYDE PARK CORNER

New Addition to South End



DARCY BRADDELL, F.R.I.B.A. (Braddell & Deane), ARCHITECT

E*

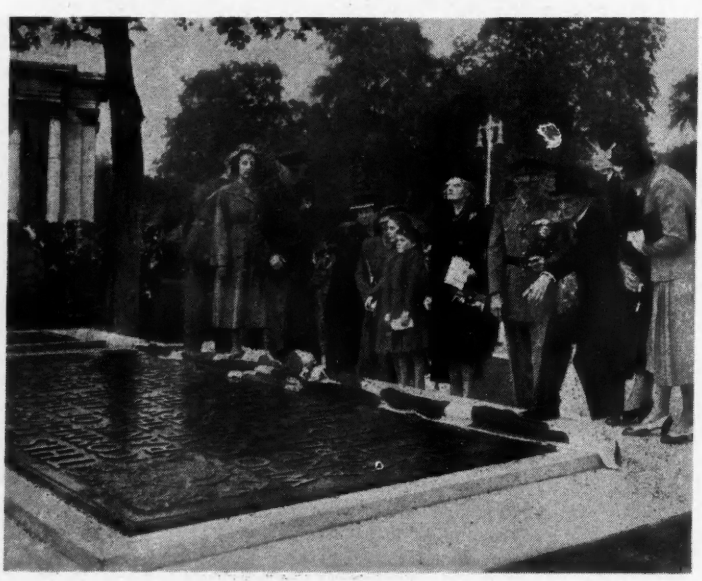
THIS PANEL WAS ADDED TO
COMMEMORATE THE 29924 OF ALL
RANKS OF THE ROYAL ARTILLERY
WHO GAVE THEIR LIVES FOR THEIR KING
AND COUNTRY IN ALL PARTS OF THE
WORLD DURING THE WAR OF 1939-1945
+ THEY DIED WITH THE FAITH THAT
THE FUTURE OF ALL MANKIND WOULD
BENEFIT BY THEIR SACRIFICE +
QUO FAS ET GLORIA DUCUNT

Cartoon of the central panel. George Mansell, designer.

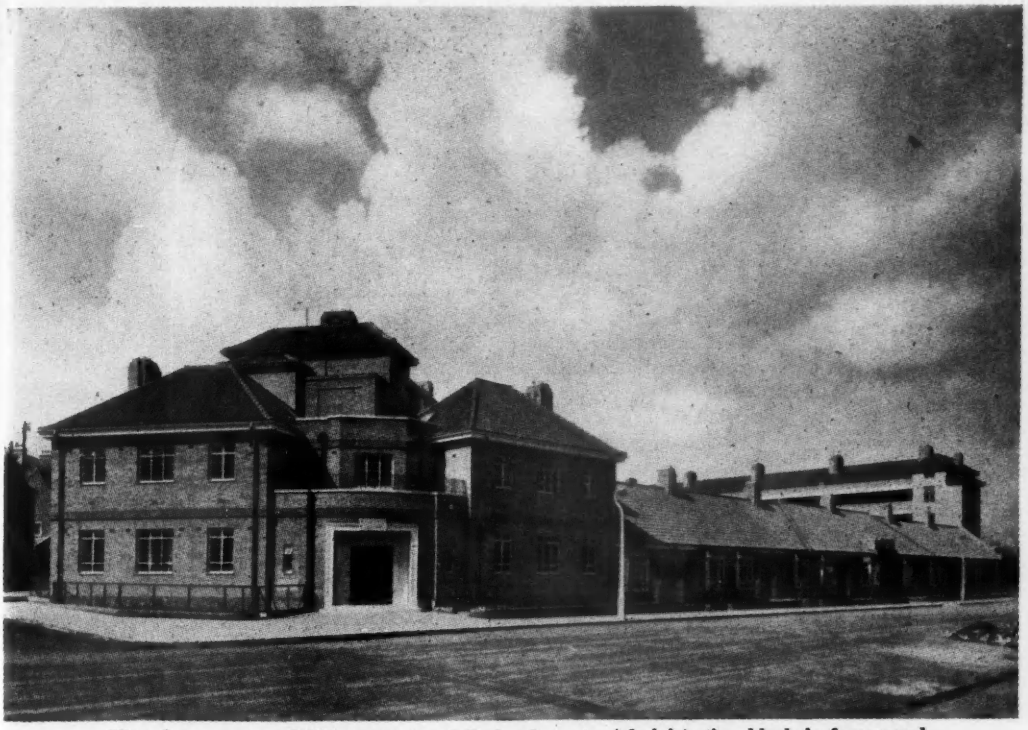
ROYAL ARTILLERY MEMORIAL ADDITION, HYDE PARK CORNER

ON Sunday morning, May 29, H.R.H. Princess Elizabeth unveiled the new addition to the south end of the Royal Artillery war memorial at Hyde Park Corner. The addition, which has been made in honour of the 29,924 officers and men of the regiment who lost their lives in the war of 1939-45, takes the form of a new flight of shallow steps with a stone platform on which three inscribed bronze panels have been incorporated. The central panel is seen in the lower photograph reproduced on this page, while above is Mr. George Mansell's cartoon for its lettering. The letters, which are 6 in. deep, are raised. Flanking panels commemorate the places all over the world in which gunners served.

To make a successful addition to an existing memorial is no easy thing, but there can be no doubt that Mr. Braddell has brought it off. Jagger's fine memorial rates high among our war memorials and will lose nothing but rather gain by the addition. The architect has been well served by his craftsmen. The centre panel, which weighs 2½ tons and had to be cast in four sections and reinforced by steel stiffeners on its underside to prevent "whip," was cast by Messrs. Morris-Singer. The Royal coat-of-arms was modelled for the architect by Mr. H. W. Palliser. The builders were Messrs. G. E. Wallis and Sons, Ltd., of Maidstone. It is of interest that Messrs. Wallis's master mason, Mr. Weatherly, who laid every stone of the original memorial, laid every stone of this addition twenty years or more later.



On the left is a scene following the unveiling. The architect, Mr. Darcy Braddell, F.R.I.B.A., is seen pointing out details of the work to Field-Marshal Lord Alanbrooke, the Master Gunner, and Lady Alanbrooke.



View from corner of Bishop-street and Prebend-street. Administration block in foreground.

"ISLEDEN HOUSE"

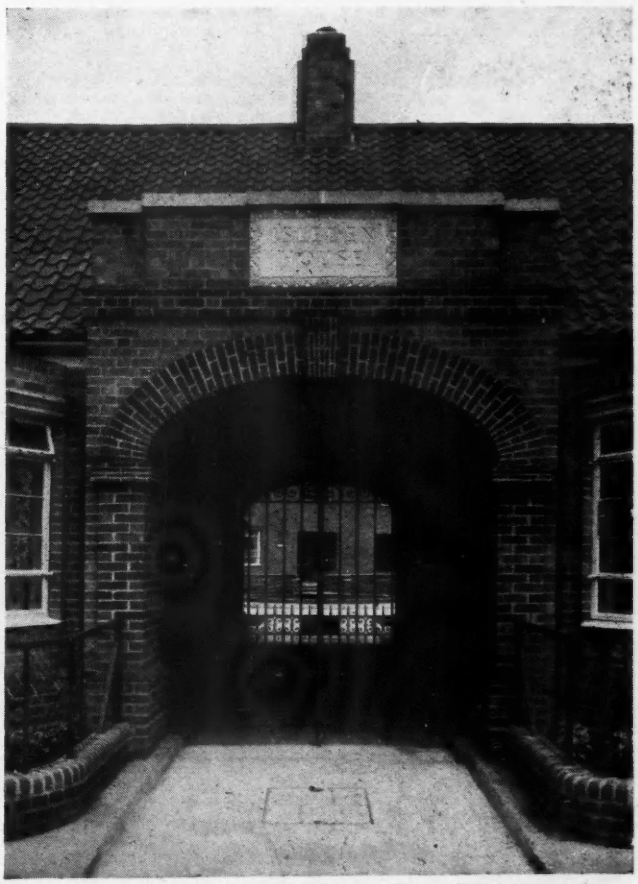
An Experiment in the Housing of the Aged Poor, carried out at Islington by the Trustees of the London Parochial Charities

CAMPBELL JONES AND SONS, ARCHITECTS

THIS scheme, the first of its kind in London, was opened by H.M. Queen Mary on May 21. It consists of 72 flats, 31 of which, situated on the ground floor, are specially designed to accommodate old people. There are communal laundries and an administration block comprising a communal dining-room with kitchens attached, sick bay and a matron's flat.

The site is a triangular one, laid out with a central courtyard. Flats on the east and north-west sides are four-storeyed, but on the south single-storeyed only. Each ground-floor flat has its own small garden to the street. The internal courtyard is laid out as a garden with terraces. The buildings are steel-framed with reinforced concrete floors. Light-coloured bricks with dark red pantiles are used externally. Pressed steel trim has been employed to economise timber.

There are four types of flat: Type A, of which there are 22, accommodate one old person. These flats comprise living-room with curtained bed-recess, fitted furniture and relayed wireless, and each has



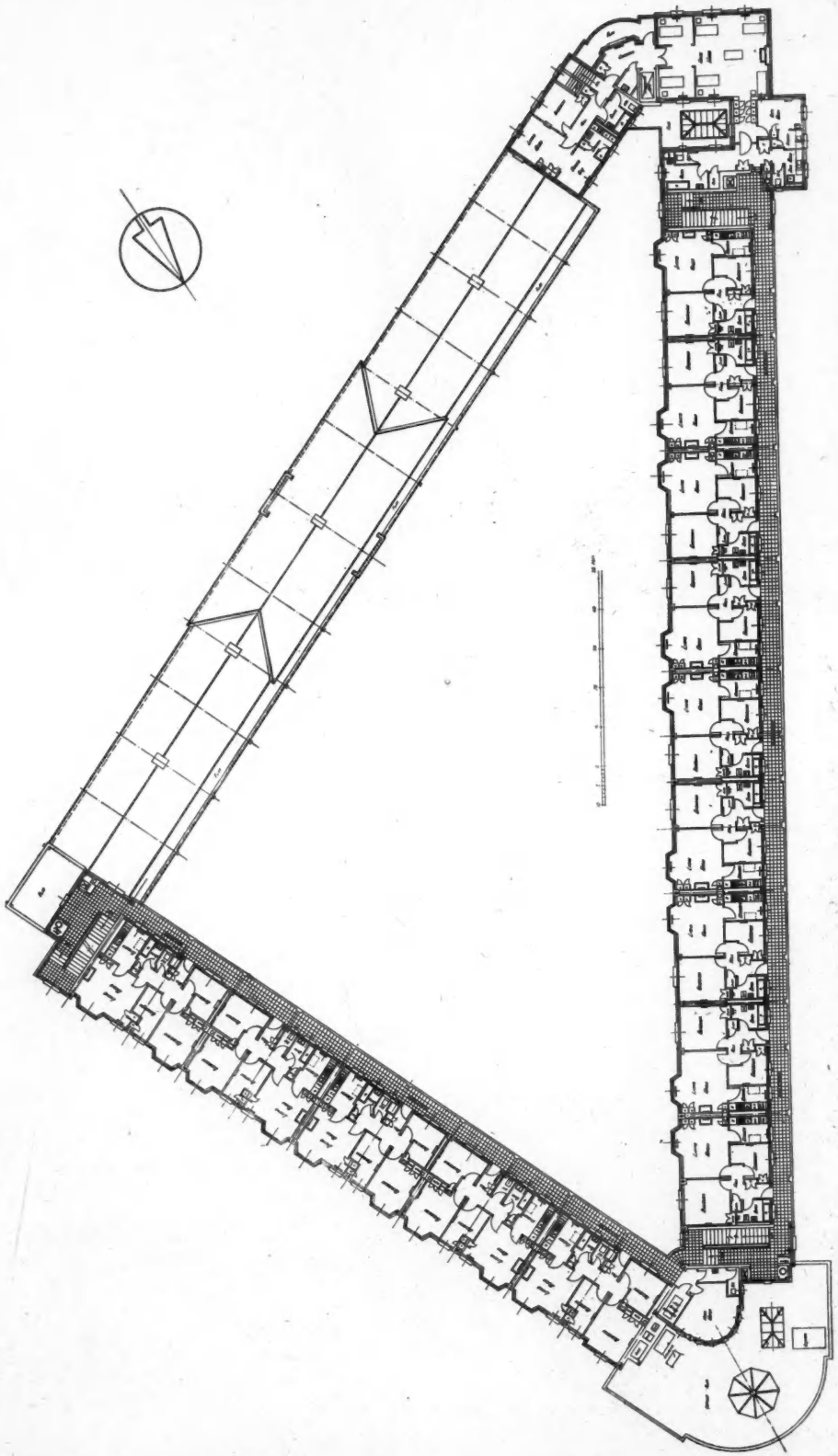
Entrance to Courtyard from Prebend-street.

THE CENTRAL COURTYARD. *Above:* **Looking North.** *Below:* **Bird's-eye view, looking South.**

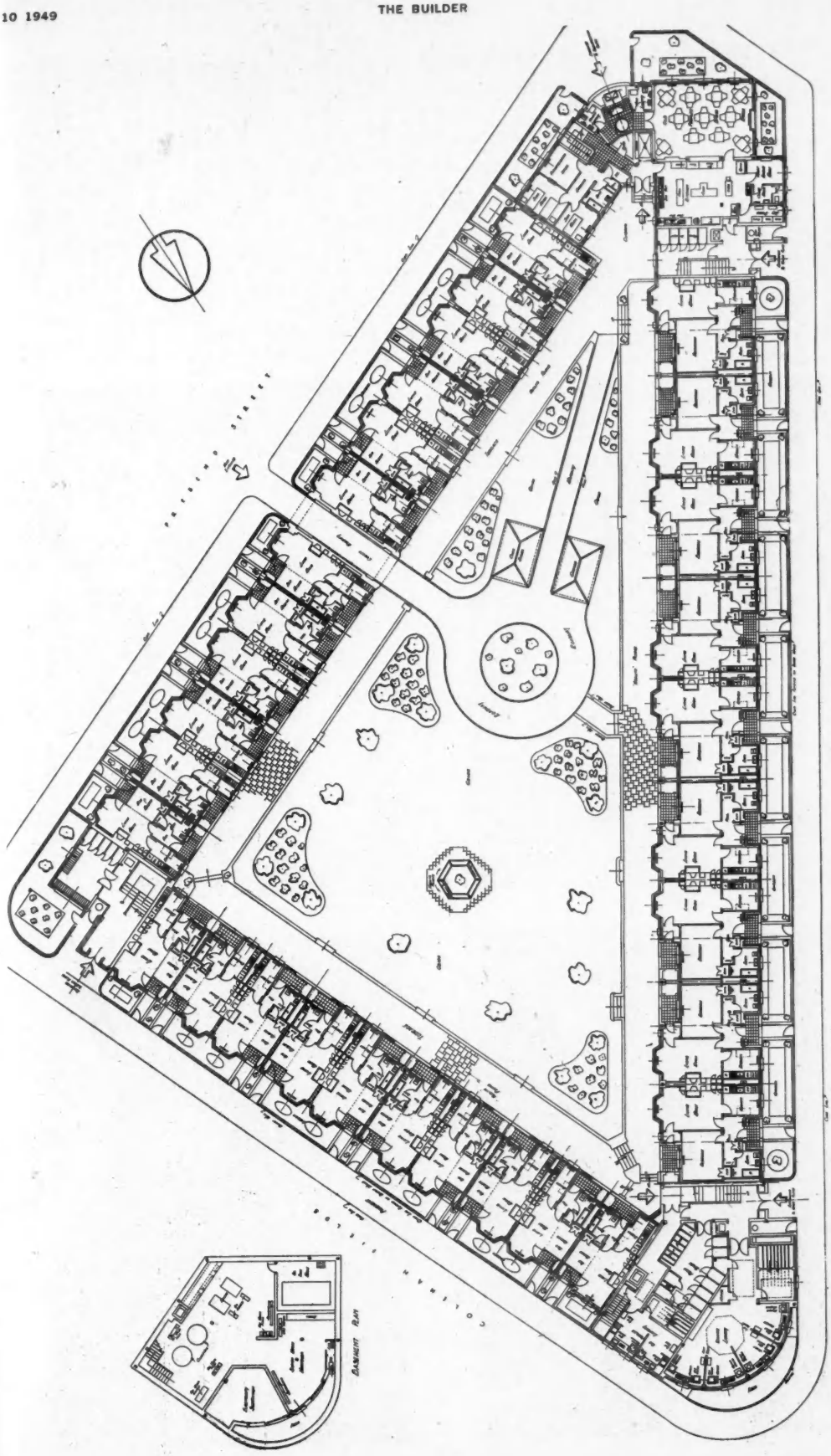
a bathroom with sunk bath and a kitchenette fully equipped with gas cooker, refrigerator, stainless steel sink and ample cupboards. This kitchen unit is standard for all flats. There is constant hot water, and a back porch with fuel and refuse bins. Living-room floors are wood block, and kitchen and bathroom " Semtex " tiles. Each flat has a bell which communicates direct with the matron's flat, for use in time of need.

THE ADMINISTRATION BLOCK. *Above:* **Old people's dining-room.** *Below:* **Sick bay.**

Type B flats, nine in all, each accommodate an old couple. Layout and equipment are similar to Type A, but rooms are larger and there is a separate bedroom. Type C (27 flats) house a normal family of three. Access is by balcony approaches. Finishes and equipment are similar to the old people's flats, but lock-up pram stores and bicycle racks are planned at ground level. Each flat is served by an electric shopping lift. Type D (15



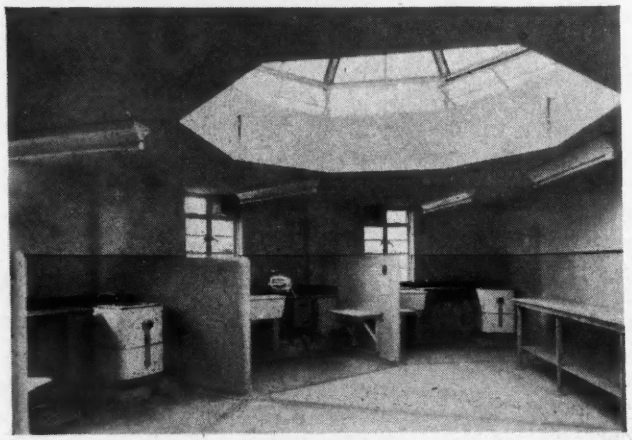
"ISLEDEN HOUSE," ISLINGTON. First-floor plan.



"ISLEDEN HOUSE," ISLINGTON. Ground-floor plan.

Typical single old person's bed-sitting room.

Typical kitchen unit (to all flats).



The tenants' laundry.

Administration block kitchen for old people's dining-hall.

"ISLEDEN HOUSE," ISLINGTON, FOR THE TRUSTEES OF THE LONDON PAROCHIAL CHARITIES.

flats) accommodate families of three to four persons, and include an extra bedroom.

The administration block layout may be seen from plans. Special features are two rest-rooms and bathroom for old people who are no longer fully able to care for themselves; a communal dining-room seating 40, wired for television; and an electric stretcher lift serving the sick bay, which is on the first floor and has six beds and full equipment, including a patients' clothes room. Each bed has a connection to the central wireless installation, with earphones, a separate reading light and a bell to summon the nurse. Adjacent to the sick bay is the matron's flat. The laundry block has two cubicles for old people and four for the other families, each with a drying chamber. Below the laundries is the central boiler house. The family flats have the use of three rooms which can be used as day nurseries or as hobbies rooms. A public telephone box is provided.

The boilers are oil-fired and thermostatically controlled. In addition to providing the central heating they supply calorifiers which provide constant hot water to all the flats.

The quantity surveyors were Messrs. Widnell and Trollope, and the general contractors Messrs. Speirs, Ltd., of Westminster. Mr. A. V. B. Williams was clerk of works. Sub-contractors and suppliers engaged are:—

Structural steelwork, Dorman Long and Co.; floors, Trussed Concrete Co.; facing bricks and roofing tiles, Finnis and Ruault; ornamental ironwork, H. H. Martyn; heating, hot water and ventilation, Young, Austen and Young; plumbing and cold water services, Stitson, White and Co.; electric lighting and power, Thorpe and Thorpe; kitchen units and wireless installation, Peto Scott; gas services and fires, Gas Light and Coke Co.; fireplaces and surrounds, Bratt Colbran, Ltd.; wood block floors and "Semtex" flooring, Horsley Smith and Calders, Ltd.; "Muroglaze" dados, Modern Surfaces, Ltd.; plastering, T. Sheen and Co.; lifts, J. and E. Hall; ironmongery, Nicholls and Clarke; steel windows and door frames, Crittall Mnfg. Co.; fire-fighting equipment, Merryweather and Son; fitted cupboards, Peerless Built-in Furniture; joinery, Sharp Bros. and Knight and Rippers, Ltd.; decorations, London Decorating Co. (Ealing), Ltd.; fencing, Durafencing, Ltd.; cast stone, Enfield Stone Co.; asphalt, Faldo Asphalte Co.; lantern lights, Luxfer, Ltd.; glazing, Faulkner Greene; clocks, English Electric Co.; and paving, Noelite Ltd.

CORRESPONDENCE

[Whilst we are glad to publish letters on professional and other matters of interest to our readers, it must be understood that we do not necessarily endorse the remarks of correspondents, who will oblige us if they will express their views as briefly as possible.]

British Railways "Tavern" Coaches

TO THE EDITOR OF *The Builder*.

SIR,—This year of grace is certainly one of progress. For the pleasure and convenience of the travelling public, long distance trains are now to be fitted with Tavern Coaches complete in Tudor guise with half-timbered beams, leaded lights with the exterior painted to represent bricks. No doubt the roof of the coach will be thatched to match.

Surely the idea is worthy of development. Why not disguise the engine as Pegasus, cover the tender in Art needlework and perch the engine driver on top in Beefeaters' livery? This ensemble would then harmonise perfectly with our Tudor railway stations.

Undoubtedly transatlantic tourists would be attracted here not in their thousands but in their millions in order to see this acme of Tudor delight.

B. A. P. WINTON-LEWIS.

29, Manchester-street, W.1.

**** The Public Relations Officer, Railway Executive, replying in *The Times* to correspondence on this subject, writes, "The restaurant car twin units are purely experimental. We are at the same time planning, in conjunction with the hotels executive, the future design for British Railways of standard restaurant cars. The experimental cars are being built to see if the public like them and to determine whether, on suitable railway services, the wider choice of facilities which they offer, compared with either the normal type of restaurant car or buffet car, will prove popular and successful. In due course, when the hotels executive and ourselves have before us the full measure of public reaction from all aspects (including the æsthetic), we shall have useful guidance for the future. The sole desire of the two executives is to offer the travelling public the most attractive and comfortable facilities that can be devised."—ED.

Architectural Assistants' Salaries

TO THE EDITOR OF *The Builder*.

SIR,—I have followed with interest the correspondence on this subject which has appeared in your columns during the past few weeks.

Mr. J. H. Stanley writes (May 27) that "the trouble is that no one represents the architectural assistant as a body." I would remind him that the Association of Building Technicians exists for that very purpose, and has been looking after the interest of salaried assistants for a number of years.

We believe that the only type of organisation that can adequately safeguard the salaried assistant is a body confined solely to salaried people. Our rules do not allow us to take employers into membership, but we will certainly welcome Mr. Stanley and his salaried colleagues.

F. E. SHROSBREE, General Secretary,
Association of Building Technicians.
London, S.W.1.

House Building in Stone

TO THE EDITOR OF *The Builder*.

SIR,—Recent years have seen the introduction and use of many "alternative" building materials, often purely experimental and sometimes quite unsuitable architecturally. There has, indeed, been a tendency for the traditional and aesthetically beautiful materials to be forgotten.

It is, therefore, good news that the Advisory Council for Building Research and Development has recommended that "an investigation should be carried out into house building in stone, with particular reference to cost."

The lean time through which the ancient stone industry has been passing is due to a variety of causes, and it is imperative that the proposed investigation should cover them all. One of the most important is the inter-relationship of design with material. In the past the use of natural stone has been discredited by its use in unsuitable ways, and it has even been declared unsuitable as a building material solely through improper usage. The successful use of multi-sized stone-faced concrete blocks in the housing scheme at Eastcombe (illustrated in your issue of May 27) is an example of intelligent and ingenious co-operation, but does not solve the problem.

The fullest possible understanding and sympathy is essential from all concerned. The designer of the buildings must be sufficiently well acquainted with the characteristics of the natural stone to adapt his design to facilitate its use. In particular he should specify a wide range of sizes of stone, thus materially assisting the quarryman, saving waste, and reducing cost. On the other hand, those responsible for quarrying and preparing the stone must understand the essential limitations of the structures in which it is to be used, and must place no unnecessary obstacles in the way of producing their material in the form required.

As cost of transport is likely to limit the use of natural stone to areas in fairly close proximity to its source this problem is evidently one for local solution, but the inspiration and initiation of the necessary co-operation must come from a high level.

The cost of production might well be reduced by improved methods of quarrying and dressing and the use of more up-to-date plant and machinery, the introduction of which has often not been undertaken only because of the uncertain future of the business. With the designer and producer working more closely together the necessary encouragement and confidence would be given to the trade to provide the necessary capital for development.

L. WETTERN,
Managing Director,
Wettern Bros., Ltd.

Croydon.

HOUSING PROGRESS

Figures for April

THE Housing Progress Summary presented to Parliament as a White Paper jointly by the Minister of Health and the Secretary of State for Scotland shows that the number of permanent houses completed in Great Britain during April was 15,110, compared with 20,160 in March.

This brings the number of permanent houses completed during the year to date to 67,822, made up as follows :— January, 15,897; February, 16,655; March, 20,160; April, 15,110.

The total number of houses completed is 650,787 (493,542 permanent and 157,245 temporary).

During April homes were provided by new building, repair of uninhabitable houses, conversion and requisitioning for 16,587 families, compared with 21,626 in March. This brings the total number of families rehoused by these methods under the post-war programme to 938,644. Excluding requisitioned houses, the number of additional homes provided is 909,289.

SOCIETIES AND INSTITUTIONS

ARCHITECTURAL ASSOCIATION

Scholarships in Architecture

THE Council of the Architectural Association announce the award of the following scholarships in architecture at the Architectural Association School of Architecture:—The "Minter" Open Entrance Scholarship (value £100): Mr. D. Flower, London, N.W.7 (Highgate Sch.); the "Sir Walter Lawrence" Open Entrance Scholarship (value £100): Mr. P. Manousso, London, N.W.3 (Highgate Sch.); the Metal Window Scholarship (value £75) presented by the British Metal Window Manufacturers' Association, Ltd.: Mr. N. R. Grimwade, Cheltenham (Cheltenham Gram. Sch.); the Natural Asphalte Council Scholarship (value £50), presented by the Natural Asphalte Mine-owners' and Manufacturers' Council: Mr. A. A. Briggs, Stockton-on-Tees (Stockton Tech. Sch.); the Northern Aluminium Scholarship (value £50), presented by the Northern Aluminium Company: Mr. M. A. Meager, Clacton-on-Sea (Clacton County Sch.); Patent Glazing Scholarship (value £50), presented by the Patent Glazing Conference: Mr. M. S. Podd, Norwich (King Edward VI Gram. Sch.); and the Metal Window Senior Scholarship (value £50), presented by the British Metal Window Manufacturers' Association, Ltd.: Mr. R. H. J. Geary, London, N.W.10 (Kilburn Gram. Sch.; Northern Poly. Sch. of Arch.).

INSTITUTION OF STRUCTURAL ENGINEERS

Council Elections.

At the annual general meeting of the Institution, held on May 26, the following honorary officers and members of the Council were elected for 1949-50 :—

President: Mr. L. Turner, B.Sc., M.I.C.E., M.I.Struct.E.; vice-presidents: Mr. J. E. Swindlehurst, Mr. W. C. Andrews, Mr. E. Granter, Mr. S. B. Hamilton, Lt.-Col. E. J. Hamlin, and Lt.-Col. R. F. Galbraith.

Hon. treasurer: Mr. S. Vaughan; hon. secretary: Mr. J. Mason; hon. editor: Mr. W. H. Woodcock; hon. curator: Mr. J. Guthrie Brown; hon. librarian: Prof. W. Fisher Cassie.

Members of Council: Prof. A. L. L. Baker, Mr. F. R. Bullen, Mr. A. F. Holt, and Mr. A. P. Mason. Associate-Members of Council: Mr. P. L. Capper and Mr. N. G. T. Ball. The new Council takes office in October.

OBITUARY

John Ford, J.P., A.R.I.B.A.

With regret we record the death on May 27 of Mr. John Ford, J.P., A.R.I.B.A., of 2, Esplanade, Seaton, Devon.

H. W. Horsley, F.R.I.B.A.

With regret we announce the death on May 19 at Holland Park, London, of Mr. Hubert William Horsley.

R.I.B.A. Golfing Society.

A meeting of the R.I.B.A. Golfing Society was held on May 24, at Denham Golf Club. The results were as follows: The Allensby Bowl was won by Marshal Walker with a score of 88-18=70. Runner-up, W. R. F. Fisher, 80-9 = 71.

The afternoon 4-ball Stapleford competition was won by Sir Giles Gilbert Scott and F. W. Charity with a score of 43 points.

THE TOWN PLANNING INSTITUTE

Administrative Problems in Securing Amenity

ADMINISTRATIVE problems in relation to securing amenity were outlined by Mr. W. L. Platts, F.S.A., L.M.T.P.I., Clerk of the Kent County Council, in the course of a paper read at the twenty-third annual country meeting of the Town Planning Institute, held at Folkestone on May 20 to 22.

Dealing with the matter of attaching conditions to planning permissions, Mr. Platts said that the number of conditions which were at present in use by local planning authorities was impossible to estimate, but the most popular, and those which were most in use, were those imposed on the grounds that they were necessary "in order to preserve the amenities of the locality." "These grounds are used in a great number of cases where varying conditions are attached," continued Mr. Platts. "For example, it might quite properly be used when a building line condition is imposed and in a great number of other cases, but I propose to deal with only one or two of them. The first general point is that great care must be taken to ensure that the decision cannot be upset on appeal because of defective conditions or because the grounds for the imposition of conditions are defective.

"Technical officers, when considering applications for planning permission, make recommendations to their Committees that permission should be granted subject to certain conditions to preserve the amenities of the area in which the development is proposed to be carried out. For example, they desire that a building shall be painted and maintained a certain colour, that land shall not be used in such a manner as to cause annoyance to neighbouring interests by, say, noise, smoke or smell, or that trees and shrubs should be planted and maintained. These are all very proper conditions, but when recommending them I advise technical officers to examine them very closely in order to ensure that not only are the conditions reasonable but that they are *intra vires*. They should also be very certain that the grounds for the imposition of conditions are adequate. It would be most disappointing to find that a condition, imposed with the best intention of preserving amenity and not with the idea of restricting development, is deleted on appeal to the Minister solely because sufficient thought was not given to the condition when it was imposed.

"Another type of condition, or rather set of conditions, is that which is frequently imposed by local planning authorities when giving permission to excavation of surface minerals. This type of activity is the one which can cause greater destruction of amenity than any other form of development and local planning authorities very naturally desire to ensure that land from which surface minerals have been extracted is returned, when the minerals have been worked out, to some use which will restore the amenities which the excavations have destroyed. It follows, therefore, that the conditions imposed are nearly always of a long-term nature. The owners are required to do something, not now, but, say, in ten years' time. It is found that on occasion the developer, when he has completed his operations and is required to carry out the conditions attached to his original permission, has neither the inclination nor the money so to do. Here is a real problem and unless careful thought is given to it when the decision is made, the difficulties will not be encountered until some years later, when it is too late to remedy the position. The planning authority needs to foresee that a developer is, as far as possible, prevented from defeating good planning by failing to comply with the conditions in his permission which bring about good amenity after the works are finished. There are two ways which can be adopted to assist with this problem. First, consideration should be given to so wording the condition that the developer is required to undertake restoration or other works in progressive stages whilst simultaneously carrying out his excavations. If he fails to comply with the conditions at the proper time the local planning authority can then take enforcement action. Second, the local planning authority can require the developer to provide sureties or guarantors.

"As to the requirement that a building shall be painted and maintained an approved colour, I have no doubt that it is possible to enforce the initial painting in an approved colour, but I am aware that a number of people are in doubt as to the action which can be taken if the applicant fails to repaint when necessary and leaves his building until the original colour has worn off. I am satisfied that this is a proper condition and can be enforced.

Preservation of Trees.

Referring to local planning authorities and their dealings with the subject of the preservation of trees and woodlands, the speaker said they were frequently placed in a difficult position because the need to preserve them was not discovered until it was known that they were to be felled. "I have had experience," he said, "of cases where a county district council has requested the local planning authority to make a tree preservation Order after felling operations have commenced. Now consider the case where there is no immediate threat of felling. A local planning authority decides to make a tree preservation Order and sets in motion the machinery for making it. Meetings of local authorities are ordinarily open to the public and to the Press and, if one can take an extreme case, it is possible for a local planning authority to decide to preserve one tree. This decision is duly reported upon in the local Press within a matter of hours or days and by the time the Order is confirmed by the Minister and becomes operative, the tree may have been felled and harm done which may take many years to rectify. I am, of course, aware of the provisions of the Act relating to the making of provisional Orders. While this may be of some assistance I am sure that it does not sufficiently give the help which is required.

Buildings of Architectural Interest.

"With regard to the making of Orders for the preservation of buildings of special architectural or historic interest, the problems are the same as I have already indicated, and again I feel that we could have been given, and even now could be given, simpler powers to achieve what I know we all desire, which is the preservation of our buildings which have some special architectural or historic interest. In making these remarks in relation to tree preservation Orders, and Orders for the preservation of buildings, I do not want it to be assumed that I desire any change to be made in the rights which the Act and Regulations give to owners relating to compensation, and the right to be consulted and to make representations. I am merely dealing with the problems which face a local planning authority when it wishes to carry out its statutory duties.

"We in Kent have recently experienced another type of difficulty in connection with the making of these Orders. The members of the committee were asked to take the necessary steps to preserve a windmill, but we decided, as the windmill was in a very poor constructional condition, not to take steps to make an Order. It would have cost a great deal of money to have restored the mill and if we had undertaken it and made the Order we should have been preserving not the original but the restored mill. In certain circumstances this might be justified. In Kent we are fortunate in having a number of excellent examples of different types of windmills and we are taking the necessary steps in conjunction with the county district councils to preserve some of them. Care must be taken to ensure that a building is not preserved merely because it is old."

Public Open Spaces.

Mr. Platts then went on to deal at some length with the question of the control of advertisements and petrol-filling stations, before turning to the problems which were likely to arise in respect of county and local public open spaces. These, he considered, were two-fold and we take the following extracts from the remainder of his remarks:—

The first is the all-important one of who shall provide the acquisition money and the second is maintenance. As to the purchase, it is said that some difficulties are being experienced by local planning authorities and by county district councils because the Regulations relating to the making of Government grants to local authorities have not been issued. This difficulty is not confined to open spaces but affects other functions of a local planning authority which it exercises in an endeavour to preserve amenity. I know that some county district councils have been loth to agree with a local planning authority that an area should be acquired as a local public open space because of the cost involved, but in many areas in Kent, and I have no doubt in other localities, there is a serious lack of open space which should be remedied by the local planning authority when preparing its development plan. You may inquire why, if it is the duty of the county council to provide for open spaces in the development plan, it should now be concerned as to whether a county district council is prepared to pay for the open space. I agree that the acquisition of the land does not necessarily immediately follow its reservation in the plan, but local planning authorities are anxious to exercise their functions in conjunction and collaboration with the county district councils and do not wish to impose upon them a financial burden which they do not feel able to bear.

Many county district councils have had long experience in the practical management of both open spaces which are left in their natural state and those upon which a great deal of work is done by way of the provision of tennis courts, cricket and football pitches, golf courses and the like. These are essentially functions for county district councils. When, however, one speaks of open spaces suitable for county acquisition, it is likely that in nearly every case they will be very extensive areas.

R.I.C.S.

Quantity Surveyors' Committee Annual Report

THE annual report of the Quantity Surveyors' Committee of the Royal Institution of Chartered Surveyors is published as an annex to the 81st annual report of the Council of the Institution.

The report summarises the work of the Committee during the past year, particularly in relation to the R.I.B.A. Standard Form of Contract, the preparation of evidence for submission to the Building Industry Working Party, and the negotiations which have culminated in the issuing of a Royal Warrant renaming Army "Surveyors of Works" "The Quantity Surveyors' Branch" of the Royal Engineers. "One of the conditions of future recruitment of the 'Quantity Surveyor R.E.' is that he should be a chartered quantity surveyor," states the report.

With regard to professional fees, the report continues: "During the period covered by this report the Committee have reviewed the various agreed scales of fees for special work and have conducted negotiations with a number of Government Departments and county and local authorities with regard to these matters.

"The War Department scales of fees for quantity surveyors have been completely revised, and also the subsistence and travelling allowances. At the present time negotiations are still going on with this Department in respect of the fees for work for the Territorial Army and Auxiliary Forces Association.

"The Committee are not satisfied that the special scales of fees, including those of the London County Council, are remunerative owing to the heavy increase in surveyors' costs and overhead expenses. An inquiry into these expenses and costs will be undertaken towards the end of 1949 and, if the result shows that full allowance has not been made for them, the Committee will reopen these questions with the departments and authorities concerned. The Committee would welcome any information from quantity surveyor members on the subject of office overhead expenses and costs and, in order that all the facts may be collated in a convenient way, a letter of explanation with a guide to the calculation of such expenses will be supplied on request to the Secretary of the Institution.

"In addition to the above, a scale of fees has been agreed with the Air Ministry for special services.

"At the request of many members, particularly those practising in the provinces, an investigation has been made into the position which has arisen in connection with the scale of fees agreed with the Ministry of Health for housing schemes for local authorities. There has been a tendency for many authorities to build houses under schemes composed of groups of two, four or six houses, each group being under a separate contract and the sites being widely scattered. In other cases there have been large numbers of different types within a scheme. There has been a request, therefore, for a definition of the terms 'housing scheme' and 'a reasonable number of different types.' A deputation has been arranged to examine these problems with the Ministry of Health."

On the subject of the National Schedule of Daywork Charges agreed between the National Federation of Building Trades Employers and the Royal Institution in 1932, the report states that it is considerably out of date and in need of complete revision, and the Federation has given notice of their wish to discontinue the old National Schedule and to prepare a new one. The main Committee has nominated three of its members to meet representatives of the Federation and to undertake the work of revision. A draft revised schedule is in course of preparation and will be submitted to the Council for approval. The task is difficult and complicated but the Committee hope the new National Schedule, when completed, will prove easier to operate than the old one and that its clarity will call for fewer interpretations and rulings than in the past.

SCOTLAND'S HOUSING PROGRAMME

More Houses for the General Population Next Year

LOCAL authorities are to be allowed to begin the building of more houses for the general population next year. The present restrictions on the placing of tenders for houses are to be relaxed, and local authorities can now arrange their own programmes of non-traditional houses. These facts are given in a circular issued by the Department of Health for Scotland, which also gives details of the principles on which the 1950 housing allocation will be based.

Explaining the reason for these changes in policy, the circular refers to the restriction imposed in October, 1947, on the building of new houses. Because of the very large number of houses then under construction it was laid down that the approval of new contracts would for some time be restricted to the provision of houses for occupation by agricultural workers and miners. Now, the circular adds, in view of the progress which the building industry has made during the past 18 months in reducing the amount of housing work in their hands, the Secretary of State considers that the time has come when the restriction on the approval of tenders for houses for the general population can be relaxed.

On the need for more three-apartment houses the circular remarks:—"The great bulk of the permanent houses approved since the war have been of four apartments. But in a recent report the Scottish Building Costs Committee recommended the inclusion of a number of three-apartment houses in the early instalments of local authorities' schemes, and since the completion of the temporary house programme many authorities have represented that more three-apartment houses are required to meet the needs of small families. Accordingly where a local authority can show that there is a real need for three-apartment houses in their district, the Secretary of State will be prepared to agree that a proportion, not exceeding 25 per cent., of the houses in any development may be of this size."

Dealing with the 1950 programme, the circular states that to afford local authorities ample time to complete their preliminary arrangements for the selection and servicing of sites and the preparation of layout in lands, the Secretary of State has decided to give authorities advance information about the houses to be begun in 1950. "For this purpose a detailed examination has been made of the present building position and the housing needs of each area, and as soon as possible the Department will write separately to local authorities intimating the allocations of houses made for their individual areas. Where appropriate, these allocations will be increased by special allocations of houses to be occupied by agricultural workers, and an indication will be given of the number of additional houses to be built in the local authority's areas by the Scottish Special Housing Association for transferred miners and the general population."

The circular stresses that to avoid the risk of overburdening the building industry as in 1946 and 1947, contracts will be released over the country as a whole in as even a flow as possible. "Accordingly, in intimating allocations to individual local authorities, the Department will suggest starting dates, for successive instalments, where appropriate. In determining these starting dates, the Department will have regard to the size of the allocation, to the number of houses already under construction in each area, and to the number of approved houses which local authorities have not yet begun. The Secretary of State hopes that, in the interest of maintaining good progress and of obtaining the most favourable prices, local authorities will co-operate in these proposals for phasing the 1950 programme."

Looking back over the work done already this year the circular points out that local authorities have already been allowed to begin a substantial number of new houses this year, and stresses that it is important from the point of view of phasing the programme as a whole that building should begin on these houses without delay.

Other points from the circular are as follows:—(1) If local authorities make good progress with the completion of the houses about to be allocated to them, it may be possible to authorise the building of additional houses in the course of the year.

(2) The Secretary of State is convinced that if satisfactory housing progress is to be maintained traditional building must continue to be supplemented by the inclusion in schemes of a proportion of non-traditional houses so long as these can be built at reasonable prices and with speed. It will be open to local authorities to decide whether they should invite tenders for traditional houses or non-traditional houses of approved types, or for both, and they should consider this point at an early stage in the preparation of their schemes. The main factors to be taken into account are the preference of the local authorities themselves, the price at which the houses can be obtained and the speed at which they can be built.

(3) Since the selection of approved non-traditional types is to be left to local authorities themselves, it is not proposed in the meantime to make any further arrangements for the allocation of such houses under centrally organised programmes. To assist local authorities in their decision, however, the Department is negotiating maximum prices with the various sponsors of non-traditional houses and a separate circular will be sent to local authorities as soon as possible giving full particulars of the maximum prices which the Department is prepared to approve in each case.

(4) The Secretary of State desires to draw attention to the fact that since the war large numbers of semi-detached cottages have been built by local authorities. To secure architectural variety and to effect economies in both the use of land and the cost of building, he thinks that a number of flatted houses and terraced types might easily be included in schemes where sites lend themselves to this treatment.

Excavating House Footings By Machinery

The Economic Use of Large-Scale Plant

IN recent years, builders have had difficulty in obtaining suitable labour for the excavation of house foundation trenches by hand, and have found the costs of manual digging very high. No special machine for this purpose exists. Experiments are proceeding in several quarters which may lead to the successful design of one, but development work of this character is necessarily slow, and it is unlikely that a suitable machine will appear on the market for some time. In the meantime, it may be of interest to consider the use of machines which have been designed for larger-scale digging, and to determine the conditions under which they can be used satisfactorily and economically for digging house foundation trenches.

The width of the trench required by the Ministry of Health's Model Bye-laws is twice the width of the superimposed wall. Depth varies with the type of soil and the configuration of the site.

There are four types of machines available in this country. All of them have been observed in use on this work, and details of the performances recorded are given below.* Except where specified, the figures quoted do not include time for marking out or for the disposal of excavated earth.

(1) *Single-bucket Excavators.*—A ½-yd. Insley back-acter was used on a site where the trenches for 13 pairs of houses were excavated, under reasonable conditions, by two men in 2½ hours per pair—an average of 4.5 man-hours per pair at the rate of 7.8 cu. yds. per man-hour. These comparatively good results were offset by the expenditure of 18 man-hours per pair on digging some internal trenches (about 3 cu. yds. per pair) and cleaning up the mechanically dug trenches. The trenches cut were rather ragged, but it is felt that the amount of cleaning up that was done was unnecessary, and that a more realistic attitude to the function which the trench performs would have considerably reduced the amount of hand-digging.

(2) *Multi-bucket rotating wheel trencher.*—An American Cleveland 95 (Fig. 1) was used on a site where the ground was very hard chalk with large flints. One pair took 176 man-hours to dig manually, but, with the machine and a team of three men, a figure of 3.34 hours per pair and a rate of 3.52 cu. yds. per man-hour was achieved. As might be expected, this mechanical excavation left very ragged trenches, and, unfortunately, no record was kept of the time taken to clean them for concreting. The use of the machine appeared to be justified on this very difficult site.

(3) *Multi-bucket sloping boom trencher.*—An Allen Parsons 12-18 (Fig. 2) was used on a site of 50 houses on medium loam. Observed time for 11 pairs gave an average of 25.7 man-hours per pair with a team of two men, the second man doing all necessary cleaning up. This was equivalent to an excavation rate of .42 cu. ft. per man-hour.

(4) *Multi-bucket vertical boom trencher.*—A Barber-Greene 44C (Fig. 3) was used on three separate sites. It is the only type of machine among those tested that will cut a square corner.

Site 1.—Here a complex footing plan, with bays, was attempted on a sloping site. Satisfactory results were not achieved until the fifth pair, which was excavated by two men and the machine in 7.8 man-hours at the rate of 2.78 cu. yds. per man-hour. This includes marking out, but not the excavation of some very short internal trenches which were dug by hand. Practically no cleaning up was necessary. After the completion of the seventh block a field test was carried out by the Ministry of Works Field Test Unit, using the same machine on a piece of waste ground nearby. The sequence shown in Fig. 4 was followed when digging the foundation trenches for orthodox, rectangular, semi-detached pairs, each having some 900 sq. ft. of floor area. The trenches were dug in one and a half hours by two men (that is, in three man-hours), at the rate of 5.3 cu. yds. per man-hour, including marking out. An estimate of cost made on the basis of the test, including a generous allowance for transport of the machine, came to £4 per pair.

Site 2.—Here, the excavation of 36 houses was sub-contracted at a rate of 4s. per cu. yd., "all-in." The excavation rate for the whole gravel-clay site was 2.8 cu. yds. per man-hour. The job was done in 62 man-hours, including all manœuvring time and delays.

Site 3.—Twelve pairs of footings were dug on this site in gravel-clay soil, with a team of two or three men in an average time of 2.2 hours per pair, including all machine time. If time for marking out had been included the average would have been 3.8 cu. yds. per man-hour. Two pairs were excavated in two hours and 45 minutes, a rate of 6.2 cu. yds. per man-hour, including marking out.

Choice of Machine.

The results quoted above are not the best which could be achieved with each type of machine; they are, in fact, more a measure of the efficiency of the site organisation. Nevertheless, the observations tend to show the advantages of the multi-bucket trenchers over single-bucket machines for this purpose.

The trenchers cut a clean trench, with a level bottom, with less skill. What is, perhaps, more important, while the rates of excavation of trencher and single-bucket machine are similar for shallow trenches, the time of excavation with the single-bucket machine is roughly proportional to the amount of material dug. The trenchers, on the other hand, will cut a deep trench at roughly the same rate as a shallow one. Of the three types of trencher, the vertical-boom type of machine appears to be most suitable. It will cut a square-end trench, its shorter overall length makes manœuvring easier, there is less tendency for it to wander off the straight line, and the spoil is discharged at sufficient height for removal by a lorry or dumper. It has, together with the rotating wheel trencher, an advantage in cutting stepped trenches that will be explained later.

Operating Notes.

These machines are expensive to hire, and economical results will not be achieved without careful organisation and thorough planning. The machine must be kept working as continuously as possible while on the site. This means that trenches for a large number of houses must be dug at one time. On clay soils it may be inadvisable to leave the bottom of the trench exposed for longer than a few hours. Concreting operations may be affected thereby, and in such instances resort will have to be made to one of the following alternatives:—

(a) The speeding-up of the concreting operation to keep pace with the excavation.

(b) The covering of the exposed trench bottoms with a few inches of concrete immediately after excavation and the completion of the concreting later.

(c) Excavating with the machine to within 3 or 4 in. of the trench bottom, and digging the remainder by hand immediately prior to concreting.

The machine should be examined, on arrival, to see that it is in order. The vertical boom machines should have a scraper, of the correct width, which follows the cutter boom and ensures clean sides and bottom of a trench. The reversing gear for the spoil discharge belt will be needed, and should be working.

Four 9-in. by 3-in. deal planks 15 ft. long will be required for bridging trenches.

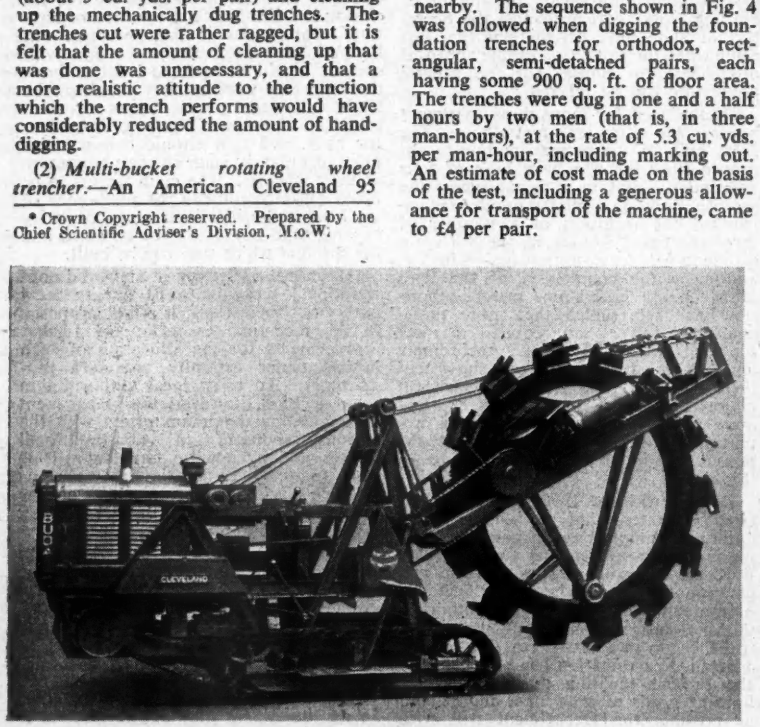


Fig. 1.—The "Cleveland 95" multi-bucket rotating wheel trencher.

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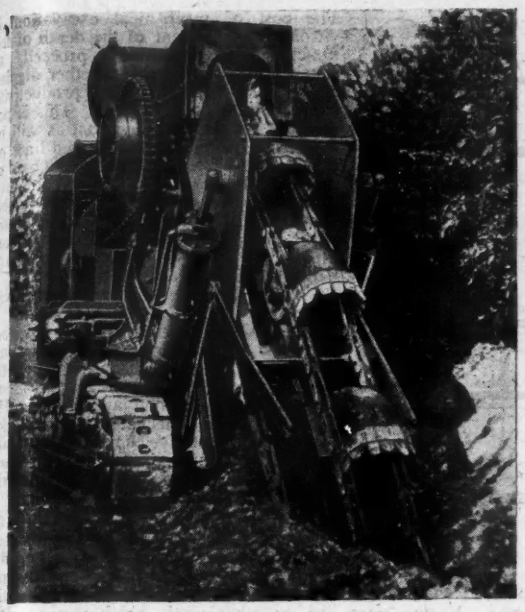


Fig 2.—The " Allen-Parsons 12-18 " multi-bucket sloping boom trencher.

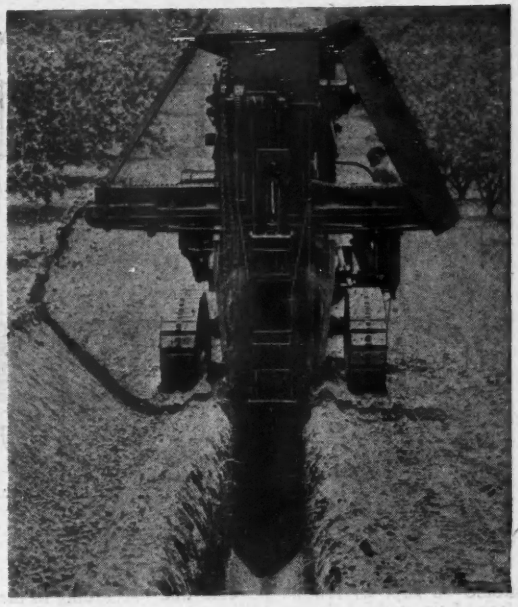


Fig. 3.—The " Barber-Greene 44C " multi-bucket vertical boom trencher.

A sheet of corrugated iron is also required, to be laid, over the cross-trenches at junctions, to avoid the discharged spoil being thrown into a trench already dug.

If the site is to be stripped of turf before excavating the trenches, an area round the block should also be stripped, so that the machine will be level and both tracks of the machine will be working on a similar surface. This is better practice than packing up one track on planks, since a difference in adhesion between the two tracks causes the excavator to wander.

The best results are obtained from the simplest plans. The inclusion of an additional footing for a spine wall, parallel to the front and back of the houses, does not greatly complicate the cutting, but short internal trenches and bays should be dug, later, by hand. The cutting sequence, the position of guide lines and the disposition of soil heaps should be designed and drawn out before the machine arrives; they should not be evolved by time-consuming, trial-and-error methods on the site. To cut the party wall trench first would reduce the number of trench bridges and would avoid having to dig away spoil heaps in the path of the machine.

The cutting plan will be different for a left hand drive machine, such as the Cleveland, than for a right hand drive machine of the Barber-Greene or Allen-Parsons types since the guide line must be on the same side as the driver, and none of these machines will operate in reverse.

Fig. 4 shows a suitable plan for a right hand drive machine where the soil is to be carted away later. The guide lines are inside the rectangles and out of the path of the machine. As they are a little shorter than the trenches, it will be necessary for the attendant to rig up a temporary extension to the line, to position the machine at the beginning of each new trench. The number of turns for the machine have to be reduced to a minimum, to avoid cutting up the ground. Fig. 5 shows a similar plan for a left hand drive machine.

Where the excavated soil is suitable for under-floor filling, it will be best to discharge it inside the block. To do this, it will be necessary for the guide lines to be on the outside. It will be found impossible to avoid the machine crossing the guide lines; it is therefore best to keep the marking out pegs well clear of the path of the machine, and the attendant should remove each line temporarily as the machine crosses it.

When the pairs of houses are arranged in lines and are close together there is a slight economy in cutting all the back and all the front trenches in two cuts, as shown in Fig. 6, which is a sequence designed for a right hand drive machine.

A bad plan is illustrated in Fig. 7. The excavated soil would be deposited in the path of the machine, for which a way would have to be cleared. Many trench bridges would be required. The attempt to discharge all the excavated soil within the perimeter of the block would be unsuccessful.

The Team.

The essential team consists of the driver of the machine and an attendant labourer, who moves trench bridges and lines and does all necessary cleaning up.

Until the team is thoroughly used to the work it is advisable to have, in addition, a supervisor, who clearly understands the plan to be followed and the difficulties likely to be encountered. He can also mark out in advance of the machine.

Marking Out.

Correct marking out is a primary factor in successful operation, and should be done well in advance of the machine. Unlike marking out for hand digging, the outlines of the trench are not indicated in any way. Guide lines are set up at a distance from the centre of the trench which corresponds to the position of the guide-line follower on the machine. The guide-line follower is mounted on the driver's side of the machine and usually about 3 ft. away from the centre line of digging. An essential part of the driver's job is to keep the point of the follower on the guide line, which should be stretched as tight as possible.

Inexpensive marking out pegs should be used as they are easily lost and they

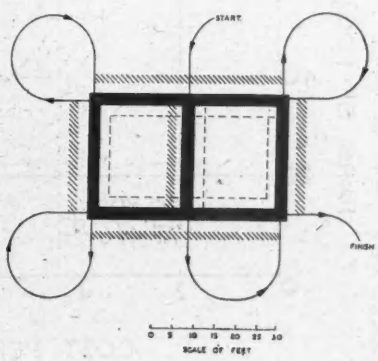


Fig. 4.

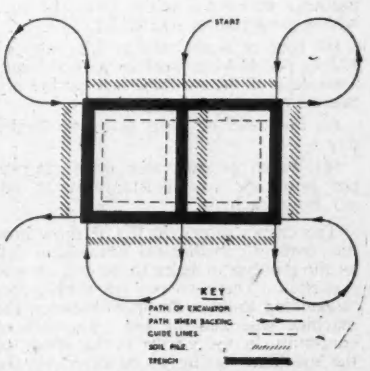
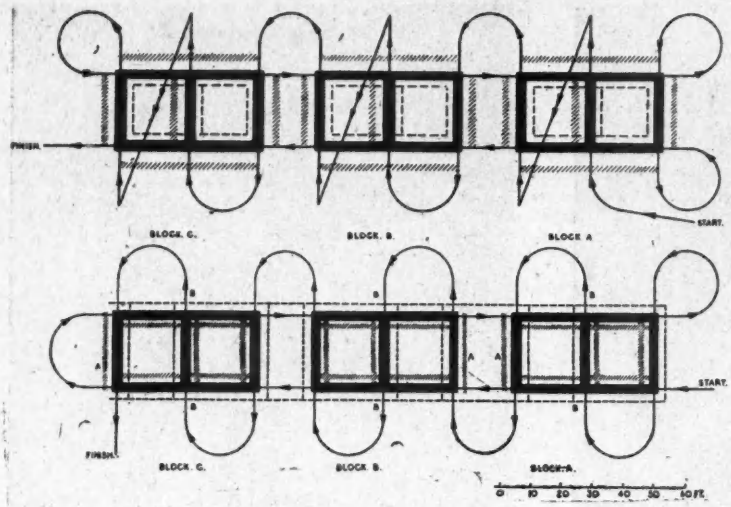


Fig. 5.



Top: **Fig. 6.** *Bottom:* **Fig. 7.**

should be kept as few as possible and clear of the path of the machine.

Cutting Stepped Trenches.

If the guide-line follower can be mounted on a point on the machine the motion of which exactly follows the bottom of the cutter, a small modification to the follower will enable steps to be cut in a simple manner: the modification consists of making the follower capable of adjustment vertically. This is possible with the vertical boom machines and the rotating wheel machines but not with the sloping boom machines. The method of cutting is illustrated in Fig. 8. The driver operates the machine so that the follower is kept on the line in plan and in elevation. When a step up is required the follower is moved down the boom by the distance corresponding to the height of the step. It will be seen that in continuing to operate the machine up the slope, the driver must keep on lowering the cutter boom to keep the follower on the line. This will result in a flat step.

Costs of Mechanical Excavation.

The estimates for the cost of digging footings by machine, shown in graph form in Fig. 9, are based on the performance of the Barber-Greene 44C machine observed in use on Site 3 mentioned above, where footings of 3½ pairs were cut per day. Assumptions made are:

(a) Transport of the machine (weight 10½ tons) at 2s. 6d. per mile for 4 journeys between machine base and site, with a minimum charge of £9.

(b) Hire of a machine at S.R. rates of £25 4s. per 44-hour week or part of week. Two days of the machine hire period are taken as transport time.

(c) Fuel and oil costs taken as £1 per day.

(d) Wages of excavator driver 2s. 9d. per hour and two assistants at 2s. 6d. per hour each.

The curves shown in Fig. 9 show how the costs of mechanical excavation fall as the number of pairs to be dug on one site rises. Three curves are shown corresponding to three distances between the machine base and the site. The lack of continuity in the curves is the effect of the machine having to be hired by the week, under S. R. O. 1948 No. 792. Thus, according to the estimate, 22 pairs can be excavated in two weeks. If one extra pair is to be dug the machine will have to be hired for an additional week, causing a sudden rise in the cost per pair.

The cost of mechanical excavation is virtually independent of the depth of the trench. The machines proceed at roughly the same speed, whether digging at 2 ft. or 7 ft., and labour productivity has little effect on the rate. This is not the case for hand excavation, as will be seen from the two vertical dotted lines on the graph, where the estimated costs of mechanical excavation are compared with hand excavation at 4s. 6d. per cubic yard for quantities of 20 and 30 cubic yards per pair, equivalent on the plans illustrated, to 22-in. trenches dug to a depth from 22½ in. to 32 in.

The graph shows that under most circumstances mechanical excavation is likely to be economic by the methods described, when over 30 pairs of footings can be dug at one time, even when the trenches are very shallow and transport costs for the machine are high. The possibilities of mechanical excavation should be carefully considered on any site for over 20 pairs of houses where more than 30 cubic yards of material have to be excavated for each pair.

These estimates are based on the assumption that the machine is brought to the site for the sole purpose of digging the footings and that no other work can be found for it. If there is drainage or other work which can be done at the same time, the cost of digging the footings mechanically will be greatly reduced.

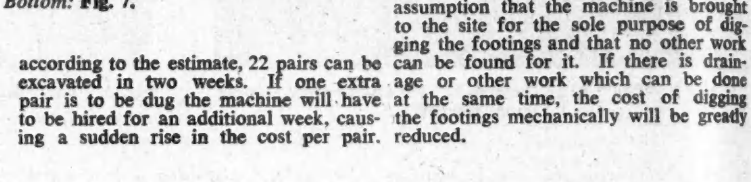


Fig. 8.

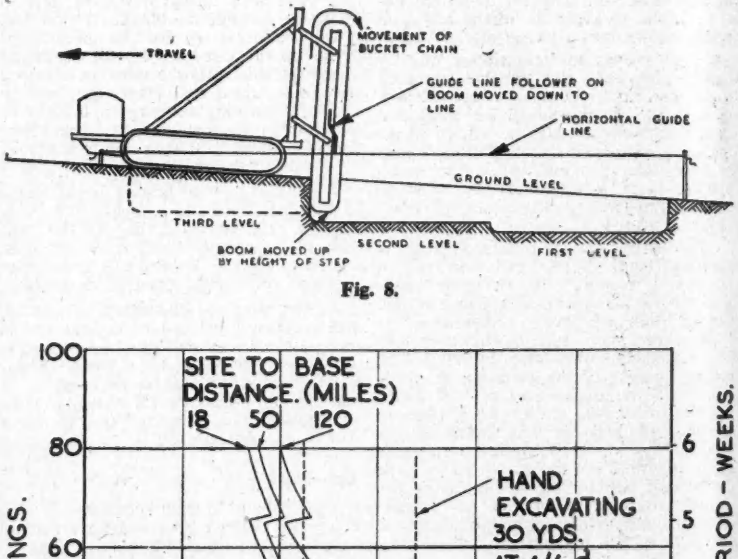

SITE TO BASE DISTANCE. (MILES)
18 50 120
HAND EXCAVATING 30 YDS. AT 4/6 d.
20 YDS. AT 4/6 d.
PAIRS OF FOOTINGS.
MACHINE HIRE PERIOD - WEEKS.
COST PER PAIR - £.
0 20 40 60 80 100
2 4 6 8 10 12
1 2 3 4 5 6

Fig. 9.

CONCRETE CRAFTSMANSHIP

"New Grade of Workman Required"

THE following notes on concrete craftsmanship, in which the suggestion is made that a new grade of workman with an expert knowledge of concrete technique is required, formed the basis of an address given by MR. J. SINGLETON-GREEN, M.Sc., A.M.I.C.E., M.I.Struct.E., at a luncheon preceding the annual general meeting of the Reinforced Concrete Association on June 1:—

During the last 30 years or so many attempts have been made to spread the gospel of concrete technology and to get available knowledge universally applied. The results have been disappointing, and I believe that this has been due in large measure to the fact that the method of approach has been at fault. It seems clear to me that no scheme can succeed unless we have the full co-operation of the building trade employees, which means the unions. With this in mind, these notes have been prepared in co-operation with Mr. F. E. Drury (past-president of the Institution of Structural Engineers and former principal of the L.C.C. School of Building at Brixton) and Mr. R. V. Chate (secretary of this Association). We have already had an informal talk with Sir Luke Fawcett (general secretary of the Amalgamated Union of Building Trade Workers of Great Britain and Ireland).

For many years there has been a demand for better concrete; but, whilst the quality and dependability of cement and aggregates have been constantly improving, the steps necessary to ensure the production of better concrete have not been taken, except in relatively few instances. The reasons for this are, perhaps, chiefly commercial; they are thought to have a close relation to cost (although it can be demonstrated that an all-round improvement in concrete quality should ultimately result in a lowering of costs).

There is no doubt that professional and scientific men who are concerned with concrete work are anxious to see better concrete. The Cement Economy Committee of the Ministry of Works would presumably welcome anything which would show a saving in cement. As better concrete, resulting from correct handling and procedure in production and use, would reduce the amount of cement required, economy would be obtained.

Spreading of Technical Knowledge.

Concrete is the only structural material which is *made on the site*. It is usually made by "unskilled" labour, under the immediate supervision of a man who has become foreman or ganger by virtue of his ability to handle men rather than as a result of his technical knowledge of concrete making. There are few craftsmen with the necessary knowledge and training to see that the concrete is made, placed and treated in the correct manner, and that *all* of it is so treated. It is a weakness in the building and engineering industries that this state of affairs should exist to-day when concrete has become such an important and widely used structural material. Plastering materials are mixed on the site, but craftsmen—that is, skilled plasterers—are in charge of the work.

To make good concrete at all times calls for more knowledge, and information on concrete technology needs to be given in some suitable manner to resident engineers, clerks of works, foremen and concretors.

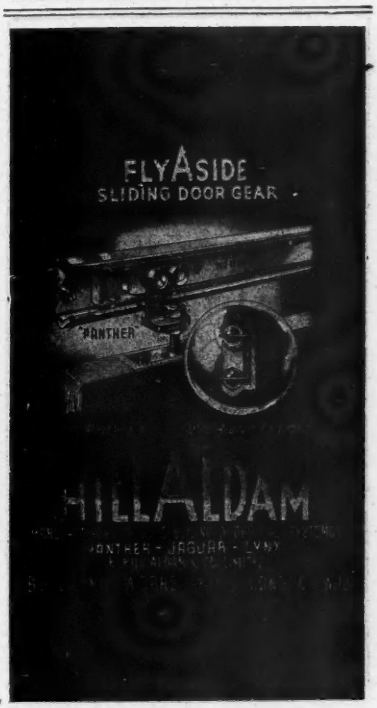
The Reinforced Concrete Association has given much consideration to this problem, and it is sponsoring classes in concrete technology. A few of these have been given in London, Manchester and Leeds. At the moment these classes are for all grades, but in general the people who attend are technicians rather than workmen.

The intention is that consulting engineers should ensure the strict carrying out of their specifications by the appointment of resident engineers and clerks of works who are well versed in the subject and have, in effect, become concrete technicians.

There is, however, a second approach to the problem—through the men who are immediately responsible for doing the work. They should be instructed and trained in the operations of concrete making, and thus become "concrete craftsmen." Both these systems could well be in operation at the same time.

New Grade of Workman.

There is a real demand, which appears likely to become insistent, for men with expert knowledge of concrete technique, and it seems clear that if good concrete is to be obtained there must be someone on the job who is continuously responsible for it. Just what his grade and exact duties should be are matters for discussion, but a brief analysis of the position may help. The concretor (whether he be called concrete technician, concretor, concrete craftsman, or something else, is immaterial at the moment) would be a man having a standing equal to that of a craftsman (it may, in fact, be decided to regard him as a craftsman), and he would have control of all operations connected with the making and placing of concrete and its reinforcement. He would, therefore, have a general responsibility for the provision of the formwork, although the carpenter would undertake its construction. Similarly, he would have control over the work of the bar benders and fixers (but would not interfere with the carrying out of the work, except where it affected the job as a whole), and would be responsible for the transporting, placing, consolidating and curing of the concrete.



The men actually wheeling and placing the concrete would not be craftsmen. It is necessary to stress this point, as many people have looked with disfavour on the general idea, simply because they thought it was an attempt to make concrete labourers into craftsmen overnight. This is not the idea at all. Labourers would continue to be employed as at present, but it seems necessary to emphasise that they should have some immediate control to ensure that they are doing their job properly. In my opinion, remote control through general foremen, clerks of works and resident engineers is not enough.

Practically every paper on concrete construction that has been read to the professional institutions in recent years has stressed the need for strict site control and for trained men capable of supervising this important branch of constructional work.

Scope of Knowledge.

Concrete technology has developed into a very important subject, and the technical knowledge required to ensure proper control of concrete work is considerable. To produce good concrete (which means the best possible concrete under particular conditions, with a specified mix and with approved materials) there is need for a concrete craftsman with a good general knowledge of the materials available, their suitability for particular purposes and the conditions and processes necessary for their effective use.

The following headings indicate very briefly the kind of knowledge required:—

Types of cement; types, selection and grading of aggregates; cleanliness of aggregates; use of various admixtures; design of mixes; proportions, mixing, transporting, placing and curing of concrete; tests of all kinds; joints; work in cold weather; waterproofing methods; types of concrete for special work; various types of surface finishes for walls and floors; hollow floor construction; lightweight concrete; special methods of placing, such as grouting and gunite; special methods of consolidation, such as vibration, compaction and suction; basic principles of reinforced concrete design; principles of formwork construction; bar bending and fixing.

Training and Using Craftsmen.

Just what type of man is most generally needed in connection with structural concrete jobs, and what his sphere of activity should be, are points which would have to be settled by expert consideration, as already indicated.

A concrete craftsman would have many labourers in his charge, and the proportion of such craftsmen on a job would not compare with the number of bricklayers on a bricklaying job. Ultimately the concrete craftsman may be someone even a little higher than the carpenter or bricklayer (but in his own sphere only).

It is not intended to suggest that a concrete craftsman should interfere with other tradesmen, or that he should do work now done by other craftsmen. In this connection one or two of the items suggested in the above lists may have to be considered as outside the range of the man's *duties*, but not outside the syllabus to be prepared for his *training*.

Assuming, therefore, that craftsman's status is desirable, many questions arise.

For example: (a) what type of man should he be, (b) what should be his duties, and (c) what limitations should be placed upon his functions?

Another important point is the line of demarcation between the jobs upon which the concrete craftsman would operate and those upon which he would not. He would probably be required on every reinforced concrete structure, but not on simple work such as the concrete foundations of dwelling-houses.

Assuming that a suitable scheme for training and using craftsmen could be formulated and accepted, it would probably be necessary to start simultaneously with:—

(a) men who are already craftsmen in some other trade (for instance, carpenters or bricklayers), and who by virtue of their special knowledge could quickly become concrete craftsmen;

(b) intelligent adults with some experience in the building industry who could train to become concrete craftsmen; and

(c) intelligent young labourers who show capacity for training to become concrete craftsmen.

It must be remembered that actual concreting occupies only a small proportion of the time on a reinforced concrete job. At present the concreting labourers are transferred to other work. A concrete craftsman would normally have plenty of things to do other than watch concrete being poured from time to time. Some of his work has been indicated above. He would not have time hanging on his hands.

THE CONTROL OF CONCRETE PRODUCTS

Importance of Research

STRESSING the importance of research in order to achieve first-class quality in building materials, MR. R. FITZMAURICE, B.Sc., M.Inst.C.E., deputy chief scientific adviser to the Ministry of Works, in addressing the annual meeting of the British Cast Concrete Federation, held recently in London, said:—

"When one comes to consider the matter, it is extraordinary how little is actually known about many of the vital problems affecting the control of concrete products. One might instance the question of vibration. Probably everybody in this gathering is using vibration for the compaction of his products. Do you realise that practically nothing is known about the fundamentals of vibration? What is the optimum frequency? What is the optimum amplitude? I could ask 20 people here and get 20 different answers. There is obviously a field for a great deal of investigation there.

"Vibrators are turned out in large numbers, but honestly I know of no really valid reason which would lead one to choose any particular amplitude or any particular frequency, and I know of nobody who can tell me with any certainty what are the effects of using particular amplitudes and frequencies. Vibration is a process which is absolutely essential to the great majority of you here, and yet practically nothing is known about the fundamentals of it. This is a very important field of research.

"Again, we all know that the control of water, the water-cement ratio, is the be-all and end-all of concrete. There are on the market many methods of controlling the water content of a concrete mix, but if one asks people how they control their water content, it nearly always comes down to the same answer: It depends on the judgment of the man on the mixer. The reason is, of course, that these various gadgets that one buys are not simple enough for the job.

"When you come to the newer developments where the very highest stress at the very earliest periods is demanded, and when you set out to make windows and reinforced units with small cover, the quality of the concrete is paramount and the water-cement ratio is also paramount. There is a great deal to be done to find out the ideal method of works control of the water content of concrete. It has got to be infallible and not to depend on the judgment of the man on the mixer, who may have a hang-over on a given day! One is bound to admit that the rather complicated gadgets which we can use are not ideal for the purpose."

INQUIRY BUREAU

Surfacing Brick Floors

Q.—Could you tell me whether there is anything on the market to cover and make waterproof ordinary Brick Floors? By this I mean something less expensive than the asphalt process, and which does not require special technical knowledge of preparation for covering.

C. J. F.

A.—Provided one can gauge material and spread mortar, there should be no difficulty with the use of a trowel and some wood screeds. The brick floor must be prepared before treatment, by thoroughly cleaning and hacking the surface. If the bricks are of a soft variety, the surface must be damped. Then slurry the whole surface, making the slurry in the following manner:— One part of proprietary waterproof solution, eight parts of water and 16 parts of normal-setting Portland cement. Into this slurry mix a small amount of ¼-in. granite chippings with a small amount of granite dust. Cover the floor liberally with this slurry and allow the same to harden for 24 hours.

The topping can be prepared as follows—the granolithic mix that is recommended and proved satisfactory is: Two and a half parts of ¼-in. washed granite chips, one half part of clean coarse washed sand, and one part Portland cement. Mix one gallon of a proprietary liquid colour into three gallons of water. There is quite a choice of colours available—reds, greens, buff, brown and blue. The liquid when mixed is used in the granolithic mix. The floor thickness should be at least 1½ in.

Large floor areas should be laid in bays, working off wood screeds and levelling with screed rules, finally trowelling. The mix should be stiff and not sloppy. Never over-trowel, and do not disturb when once the set has taken place. If the base of the floor on which the bricks lie is at all cracked, reinforce the topping described with a strong galvanised wire mesh, well lapped at all joints. The floors when finished can be polished with special wax polish.

G. W. H.

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CODE OF PRACTICE

Terrazzo Flooring

THE Council for Codes of Practice for Buildings has now issued as a draft for comment, Code 204.102, "Terrazzo Flooring," which was prepared on its behalf by a committee convened by the Royal Institute of British Architects. This is a sub-code of Code 204 "Jointless Flooring" and deals with terrazzo as a finish for floors and stairs.

Information is given on the nature and characteristics of terrazzo flooring, the circumstances in which it is suitable for use, its resistance to wear and abrasion and the treatment needed to prevent slipperiness. Although the flooring is one of the types commonly known as jointless, it is recommended that, to avoid cracking, terrazzo should only be laid in panels limited in size. The code specifies further precautions which should be taken to combat the liability to cracking, due to the differential shrinkage or expansion of the terrazzo, the screed and the concrete sub-floor. Advice is given on the materials to be used, the preparation of the sub-floors, mixing and laying the flooring and on the subsequent surface grinding and finishing. The treatment of stairs, margins, skirtings and joints around panels is also described. There are diagrams showing the suitable arrangements of joints and illustrating the treatment of floors with bonded screed and of floors with separated screed.

The code is in draft form and subject, before final publication, to amendment in the light of comment received. Comments, which are invited, should be submitted by July 4 next. Copies may be obtained from the Sales and Distribution Department of the British Standards Institution, 24, Gillingham-street, London, S.W.1, price 2s. 6d., proof reference CP(B)852.

Schoolboys to Visit House of Commons.

By permission of the Ministry of Works and at the invitation of the London Master Builders' Association, a group of senior boys from Harrow School is to visit the new House of Commons on July 19. The boys are members of the school's Engineering Society, Architectural Society, Surveyors' Group and Economic Sixth. They will be received on the site by the President of the L.M.B.A., Mr. Nigel Hannen, and by Sir George Burt, chairman of John Mowlem and Co., Ltd., the contractors responsible for the building.

IN PARLIAMENT

Housing Bill

BEFORE the Housing Bill passed its final stages in the House of Commons a number of changes were made.

On Clause 20 (amounts, and payment, of improvement grants), MR. BLENKINSOP, the Parliamentary Secretary to the Ministry of Health, moved an amendment to enable local authorities, with the approval of the Minister, to make a grant larger than the 50 per cent. specified in the Bill for the maintenance and repair of houses of special architectural and historical interest. He said it was felt that in many cases it would be highly desirable, in the interests of the nation, that necessary work on such property should be carried out.

The amendment was agreed to.

On Clause 41 (Amendment of Section 1 of the Small Dwellings Acquisition Act, 1899), Mr. Blenkinsop moved an amendment whereby local authorities might make instalment payments of a loan advanced in respect of a house in course of construction, provided the value of the advances did not at any time exceed 80 per cent. of the work done. The present proportion, he said, was 50 per cent., but in Committee the Government undertook to raise it to 80 per cent.

The amendment was agreed to, as were new clauses moved by Mr. Blenkinsop, to provide that local authorities should not consider applications for second grants for conversion, but make provision for second grants for improvements, with the right of an owner to make an appropriate increase in rent; to permit the owner of premises to charge a tenant up to 8 per cent. of the cost incurred by him of work done in addition to improvements carried out under a grant; to give power to increase rents fixed under the Housing (Rural Workers) Acts in certain cases; and to revive the powers of local authorities to make bye-laws fixing the number of persons who might occupy a working-class house, but limited to houses let as lodgings or occupied by members of more than one family.

MR. E. ELLIOT moved a new clause (Development Charges) to give the Minister of Health the opportunity of making a statement on the subject.

MR. BEVAN explained that the clause dealt with a type of property which had attracted a grant from public funds in very restrictive conditions. Those conditions had the effect of keeping down the value of the property to the owner, and therefore it could not logically be said that a development charge under the Town and Country Planning Act ought to be paid by the owner. It was highly improbable that a development charge would ever alight on such property, but steps would be taken by the Minister of Town and Country Planning to exempt this class of property.

MR. ELLIOT, in welcoming the Minister's declaration, said that further declarations would have to be forthcoming from the Minister of Town and Country Planing to exempt this class of property.

MR. BEVAN warned Mr. Elliot that this concession must not be regarded as a precedent.

A long discussion took place on an amendment moved by MR. HARE to delete Clause 8 (power of local authorities to sell furniture to persons housed by, or by arrangement with, them). The amendment was negatived by 210 notes to 100.

The Bill was eventually read the third time.

Scottish Labour.

In reply to MR. EMRYS HUGHES, MR. ISAACS said he was satisfied that the present labour force engaged on house building in Scotland was adequate in size to meet the needs of this year's programme. There was a shortage of plasterers, but the introduction of an incentive bonus scheme and new methods of production should help to ease the position. The adequacy of the labour force would be kept under constant review as the programme developed.

BUILDING PLANT

M.o.W. Demonstrations at Edinburgh and Glasgow

A DEMONSTRATION of various types of building plant—ranging from powered hand tools and brick elevators to steel scaffolding and multi-purpose tractors—is to be held in Edinburgh and Glasgow on June 21-23 and June 29, June 30 and July 1 respectively. The Rt. Hon. Lord Morrison, Parliamentary Secretary to the Ministry of Works, will open the Edinburgh exhibition at the Canning-street site at 11 o'clock on the first day; the Glasgow exhibition will be opened by Mr. J. J. Robertson, the Under-Secretary of State for Scotland.

The Ministry of Works, in association with the Building and Civil Engineering Industries' Joint Advisory Panel for Scotland, is sponsoring the plant demonstration as providing an opportunity for Scottish builders to see some of the machines and equipment available at present. A Ministry of Works exhibit and a daily display of films on the building industry will be included in the demonstration. On each site the exhibition will be open from 10 a.m. (11 a.m. on the opening day) to 6 p.m., but the second day of each demonstration is being extended to 8 o'clock to enable building operatives to visit the display.

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THE BOUNDARY COMMISSION

Annual Report for 1948

IN their Annual Report* for 1948 the Local Government Boundary Commission quote a letter sent by the Commission last November to the Minister of Health, drawing his attention to five important questions† raised in their previous reports, and asking whether the Government were likely to put proposals before Parliament for legislation with regard to any of them. They have been informed, in reply, of Mr. Bevan's recent statement in the House of Commons that the Government "have decided that it will not be practicable to introduce comprehensive legislation on local government reconstruction in the near future."

The Commission have come to the conclusion that it is now their duty to proceed with their work on the basis of the existing law and Regulations. They are reluctant, however, to take any steps which would obviously be inappropriate if effect should be given at some future date to their previous recommendations, either as they stand or in some modified form. For this reason they intend to select cases where their Orders would be appropriate whether the law is amended on the lines of the recommendation in their reports or not. Examples, they say, would be extensions of some boroughs or unions of some counties. They intend also to continue the investigation of county boroughs with populations below 60,000, and to proceed with the systematic review of county districts, of which some 700 remained to be visited at the end of 1948.

No definite recommendations are made for new county areas in Wales. The Commission report that the Welsh County Councils are "unanimously and unalterably opposed to any interference with the present administrative counties." They state they will proceed to make Orders in relation to each of the counties in Wales, but will first investigate the county districts in at least some of them.

The Commission end by saying that, although progress towards making Orders has been slow, their conferences and discussions have been valuable in bringing home to the thousands of local government members and officers who have been met, the problems confronting them to-day. "We still remain of the opinion," they add, "that neither we nor our successors can everywhere create effective and convenient units of local government without some amendment of local government legislation."

During 1948, 779 conferences with local authorities were held. In 1946 and 1947 there were 598 conferences—a total of 1,377 since the Commission were appointed.

* Report of Local Government Boundary Commission for 1948: House of Commons Paper No. 150, H.M. Stationery Office, price 2d., post free 3d.

† NOTE: The five questions relate to:—(1) The fact that a decision of the Commission must apparently relate to a whole local government area, and that the area must then stand unaltered for ten years; (2) restrictions on alterations to non-county boroughs; (3) distinctions between different types of county districts; (4) the functions of counties and county boroughs [the 1947 Report made proposals for new one-tier counties, and a new type of county borough administration]; and (5) the Greater London area. [The Commission have no jurisdiction over the London County Council area, and have asked whether they ought to assume that the London County Council boundaries are not to be reviewed by some authority.]

BRACKNELL NEW TOWN

Size of Site Reduced

THE New Town at Bracknell, Berkshire, is to go ahead, but the Minister of Town and Country Planning has reduced the area originally proposed by nearly one third so as to exclude 770 acres of farmland. The 1,850 acres now to be designated contain comparatively little agricultural land. Although the reduced area will probably be insufficient for the proposed ultimate population of 25,000, the Minister believes it will later be possible to swing the site further on to non-agricultural land to the south and east of Bracknell. He will defer any question of additional designation until a plan is available on which precise needs can be judged.

Mr. Silkin's decision, taken after consultation with the Minister of Agriculture, follows the public inquiry into the Draft Designation Order held at Bracknell on February 23. Although a new town in the Bracknell area was not opposed in principle, there were strong objections to the site's inclusion of agricultural and market gardening land, and an alternative site in the woodlands south of Bracknell was suggested.

The Minister personally inspected the alternative site, which has frequently been described as "scrub land." In fact most of the area is covered with Scots pine and other growing trees, and is an important source of supply for telegraph poles and pit props. Nevertheless, the Minister would have been prepared to consider siting the new town there were it not for other difficulties, such as the absence of direct rail communication, the impossibility of providing a deep belt of open country round the town, and the fact that building would be impracticable on some of the land because of steep-sided gullies caused by erosion.

After careful consideration, the Minister has concluded that the alternative site is not good enough for the new town. The designation order he is now making will exclude 770 acres of farmland, and while he cannot guarantee that none at all of this land will eventually be needed, he will instruct the Development Corporation to make the most of the land now being designated and, if it is necessary to add to it, plan as far as possible on non-agricultural land.

NEWS IN BRIEF

Avoidance of Cracking in Bricks.

Building Research Station Digest No. 6, "The Avoidance of Cracking in Masonry Construction of Concrete or Sand-lime Bricks," has been published by the B.R.S., Garston, Watford, Herts.

Builder as Mayor of Lichfield.

Councillor A. W. Handford, managing director of Messrs. J. R. Deacon Ltd., of Lombard-street, Lichfield, has just been elected mayor of Lichfield. Councillor Handford is a member of the Council of the Midland Federation of Building Trades Employers and president of the Lichfield Association.

Timber Courses.

Dr. H. E. Desch, F.R.I.C.S., announces that he will be repeating his one-week timber courses at the Lincoln College Hostel, Southfield House, Oxford, on the following dates: July 11 to 16 and 25 to 30. The fees, which include tuition, board and accommodation for the duration of the course, are £12 12s. Further particulars and entrance forms are obtainable from Dr. Desch, Wildshaw, Limpsfield, Surrey.

Institute of Quantity Surveyors.

The May-June (No. 7) issue of the Journal of the Institute of Quantity Surveyors, contains the report of the Council for the period May 1, 1948, to April 30, 1949, as well as reports on the work of the various committees.

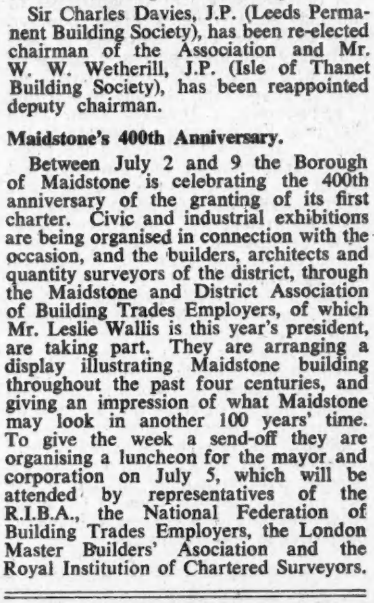
Home Ownership and Citizens.

Mr. Anthony Eden, M.P., in a message to the Midland Association of Building Societies at the annual meeting in Birmingham on May 31, said: "The objective of Building Societies is to enable our people to own the freehold of their homes. I feel that this is much to be encouraged. Not only does this promote thrift but it leads to a natural assumption of responsibility which in turn makes for good citizenship."

Sir Charles Davies, J.P. (Leeds Permanent Building Society), has been re-elected chairman of the Association and Mr. W. W. Wetherill, J.P. (Isle of Thanet Building Society), has been reappointed deputy chairman.

Maidstone's 400th Anniversary.

Between July 2 and 9 the Borough of Maidstone is celebrating the 400th anniversary of the granting of its first charter. Civic and industrial exhibitions are being organised in connection with the occasion, and the builders, architects and quantity surveyors of the district, through the Maidstone and District Association of Building Trades Employers, of which Mr. Leslie Wallis is this year's president, are taking part. They are arranging a display illustrating Maidstone building throughout the past four centuries, and giving an impression of what Maidstone may look in another 100 years' time. To give the week a send-off they are organising a luncheon for the mayor and corporation on July 5, which will be attended by representatives of the R.I.B.A., the National Federation of Building Trades Employers, the London Master Builders' Association and the Royal Institution of Chartered Surveyors.



EASTERN COUNTIES

Half-Yearly Meeting

PUNGENT comments on the subject of building costs were made by MR. NELSON J. LAWRANCE, President, at the half-yearly meeting of the Eastern Federation of Building Trades Employers, held at Clacton on May 31.

Mr. Lawrance said that despite the limits imposed on the industry at the present time, he believed existing resources could be much better deployed than was the case under present Government policy. He continued:

"I feel that our most pressing housing problem at the moment is that of costs. In the Eastern Federation it is our view that the experience of the industry should be utilised to a far greater extent than is being done at present. The need for cheaper houses is a national need of which our industry is very conscious, and it is a matter for regret that certain proposals we have made on this have not been accepted by the National Federation. We have decided to proceed on our own with a scheme designed to make available to local authorities in the Region, to a greater extent than ever before, the wealth of house-building experience possessed by our members. At all costs we must avoid a breakdown in the housing programme through the inability of the tenants to pay the rent, as well as the inability of the rate-payer and tax-payer to meet the ever increasing burden of social services being imposed upon them."

Refering to the continued insistence of the Minister of Health on the 1 to 4 ratio, Mr. Lawrance said there was little scope for the private enterprise house-builder to build on the scale which, before the war, was so effective in producing good but inexpensive houses; moreover, the present hand-to-mouth system of individual licences had a very discouraging effect on those who were anxious to bring their pre-war organisation into play. The parochial approach to the housing problem had created many difficulties, one of the most recent being that certain towns in their region had licences to issue, but little, if any, private land left on which building could take place.

"The Minister of Health may possibly feel that further housing relaxations would interfere with his housing programme," commented the President, "but it is my view that shortage of money is now the most effective deterrent to heavy spending on maintenance and repair work. We welcome the gradual removal of controls and we strongly press for further relaxations."

Speaking at the Federation dinner at the Royal Hotel, the chairman of the local council, Councillor A. P. MEAGER, said nowadays all employees were suffering from frustration. He contended, however, that the British employer was one of the most progressive men in the world and, given his head, showed sincerity and initiative.

MR. LAWRANCE said that the Federation should extend its activities and show that it was utilising its advantages as best it could, otherwise Government departments would arrogate these.

MR. NIGEL HANNEN, President of the London Master Builders' Association, remarked that public service and private enterprise were very necessary, one to the other, and must go hand-in-hand.

Mineral Claims.

The Central Land Board announce that the new time limit for certain mineral claims is to be December 31, 1949.

OFFICIAL NOTIFICATIONS

Kerosene (Paraffin Oil) Priority Scheme.

The Kerosene (Paraffin Oil) Priority Scheme will be continued until further notice. The scheme will operate as before. It will not be necessary for priority oil, and as current Kerosene Record Cards are valid until July 31, 1950, new cards will not be issued this year.

Prices for Imported Softwood.

The Board of Trade have made the Imported Softwood Prices Order, 1949, which will come into force on June 20, and provide revised maximum ex-ship prices for imported softwood. Broadly, the Order reduces the prices of the lower qualities, and increases those of the better ones: the general level of prices has been maintained. The purpose is to bring the prices for individual kinds of softwood into a closer relationship with relative c.i.f. costs and market values in this country. The flat rate increases which had to be made in the statutory maximum prices of softwood during and after the war (due to the rise in prices in supplying countries) have resulted in many anomalies in prices as between the various species, grades and sizes. The new Softwood Prices Order removes most of these anomalies.

The Timber (Charges) (No. 10) Order, 1949, made by the Treasury and also coming into force on June 20, imposes charges, corresponding to the increases in price, on quota holders' stocks of imported softwood. Losses on quota holders' stocks due to the reductions in prices will be met by the Board of Trade under the softwood "Fall Clause," as agreed with the Timber Trade Federation.

Copies of Orders will not be available until June 17. They can then be obtained through any bookseller or direct from H.M.S.O., price 1s. and 1s. 4d. respectively.

TRADE NEWS

Industrial Fans.

The Sturtevant Engineering Co., Ltd., Southern House, Cannon-street, London, E.C.4, have issued a new illustrated booklet describing the various types of industrial fans manufactured by them.

Two Appointments.

Mr. W. H. Judd, manager of the Watford branch of Roberts Adlard and Co., Ltd., roofing contractors and builders' merchants, Tweedy-road, Bromley, Kent, and Mr. J. W. Bowles, secretary of the company, have both been appointed to the board of directors.

Building Firm's Dividend.

At a board meeting of Taylor Woodrow, Ltd., in London on May 26, it was decided to recommend to shareholders at the general meeting on July 15 next a final dividend for the year ended December 31, 1948, of 12½ per cent. less tax at 9s. in the pound. This, together with an interim dividend of 7½ per cent. less tax already declared and paid, makes a total dividend of 20 per cent. for the full year, the same as for 1947. The net profit for the year, after providing for expenses and depreciation, but before allowing for taxation, amounts to £195,314 as compared with £131,499. The dividends for the year absorb £36,300 net (£36,300). The directors have transferred to general reserve £60,000 (£10,000) and provided for taxation £94,792 (£85,000), the carry forward being £49,070 (£44,848).

Floor Tiles.

Messrs. Semtex, Ltd. (a Dunlop company), 185-189, Finchley-road, N.W.3, has issued an illustrated pamphlet describing a full range of "Semastic" decorative floor tiles, together with details of their composition and the types of buildings in which they might suitably be installed.

An Accident Averted.

Messrs. Mackay Industrial Equipment, Ltd., report that while a "Dormer Dome"-fitted Allis-Chalmers H.D.5.G., owned by the Yiewsley and West Drayton Urban District Council, was being operated recently at Yiewsley, a rock weighing approximately ¼ cwt. crashed on to the Perspex canopy and rebounded, the only damage being a cracked Perspex panel. The driver escaped unhurt.

A New High-discharge Truckmixer.

A new British high-discharge truckmixer of 2 yds. capacity is being manufactured by Blaw Knox, Ltd., of Clifton House, Euston-road, N.W.1. The manufacturers announce that the "Rex" Motomixer functions as a mixer as well as an agitator. This means that with central batching arrangements the unit can be used for mixing. With central mixing the unit can be used as an agitator and it overcomes the difficulty of transporting centrally mixed concrete in dumpers, wagons, etc., when segregation of the concrete can take place. The mixer mounts on to most five-ton short wheel-base chassis lorries and does not require a special truck to accommodate it. It is a self-contained unit and is not dependent on a power take-off, being driven by a 25-h.p. Climax petrol engine. Thus the mixer and lorry are independent units and in the event of mechanical failure of the lorry the mixer can be transferred to another truck.

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THE SCOTTISH BUILDER

April Housing Figures

There were 2,187 new permanent houses completed in Scotland during April. This brings the total of new permanent houses provided under the post-war housing programme to 47,881. Including temporary houses and other accommodation made available by conversion of existing premises etc., altogether 92,151 new homes have been provided in Scotland since 1945.

These figures are contained in the Department of Health for Scotland's April housing return. April's total of 2,187 new permanent houses includes 2,074 built under local authorities and the Scottish Special Housing Association, 93 under private enterprise and 20 under Government Departments.

NEW BUILDINGS

Ayr.—Corporation propose another development of the Dalmalling housing site, for which the architects are Cowie & Torry, 5, Wellington-sq., The Sandgate, Ayr.

Ayr.—Corporation propose reconstruction at Wallace-st. for new public offices, etc., for which the architect is Thomas O'Beirne, Burgh E., Municipal-bldgs., and the quantity surveyors are Moffat & Wright, measurers, Ayr.

Bishopbriggs.—A suite of shops, etc., is to be erected at Auchinarne-rd., for which the architect is William Thomson, Ferndene, Garngaber-av., Bearsden.

Glasgow.—At Jamaica-st., for Arnott Simpson & Co., Ltd., Argyll-st., additions and alterations to be made to warehouse buildings, for which the architects are Will J. B. Wright & Kirkwood, Carlton House, Blythswood-sq., Glasgow.

Glasgow.—New factory and storage buildings, etc., are to be erected at Royston-rd., for which the architects are Charles MacNair, Elder & Ridley, 529, Sauchiehall-st., Charing Cross, Glasgow.

Lanarkshire.—C.C. to erect a school and houses at Yuldohuldo, for which the architect is Samuel MacColl, County-bldgs., Beckford-st., Hamilton.

Lanarkshire.—C.C. to erect new houses at Candywill, for which the architect is Samuel MacColl, County-bldgs., Beckford-st., Hamilton.

Shotts.—Extensions and alterations, etc., at Shotteskirk-rd. factory are to be carried out from plans by their own architects for Mitchell, Johnstone & Co., 160, West George-st., Glasgow.

FUTURE CONSTRUCTION

PUBLIC APPOINTMENTS

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

JUNE 13.

†***Beds. C.C.**—First section of Secondary Grammar-Technical School at Biggleswade. County A., Shire Hall. Dep. £2 2s.

†***Lincoln (Parts of Kesteven) C.C.**—Pair of police houses at Somerby Hill, Grantham. County A., County Offices, Sleaford.

JUNE 16.

†***Surrey C.C.**—Primary school at Broughton-ave., Ham, Richmond. County A., County Hall, Kingston-on-Thames. Dep. £2 2s.

JUNE 17.

†***Chigwell U.D.C.**—24 flats at Valley Hill, Loughton. J. W. Faulkner, C., Council Offices, Loughton.

†***Dudley C.B.**—Eight old people's cottages at Holly Hall estate. Boro' A., Priory Hall. Dep. £2 2s.

†***East Sussex C.C.**—Kitchen and dining-room at Rye County Grammar School. J. Catchpole (A.), County A., County Hall, Lewes.

JUNE 18.

†***Essex C.C.**—Infants' school at South Ockendon. H. Conolly (F.), County A.

†***Essex C.C.**—Roof repairs 2 schools. County A.

†***Essex C.C.**—Headmaster's house at Chafford School, Michaelstowe Hall, Ramsey. County A.

†*St. Ives R.D.C.—Six houses at Earith and 10 at Houghton. Lea, Milner, Doe & Wardley, 4, Market Hill, Huntingdon. Dep. £1 1s.
†*Staffs C.C.—Additional classrooms at Eccleshall County Primary School. A. C. H. Stillman, Architect & S. Dep. £2 2s.
†*Staffs. C.C.—Alterations at Bilston College of Further Education. A. C. H. Stillman, Architect & S., County Ed. Offices, Earl-st., Stafford. Dep. £2 2s.

JUNE 20.

Bury C.B.—New County Secondary Modern School at Owlerbarrow, Walshaw-rd. B.E., Bank-st. Dep. £5 5s.

JUNE 21.

†*Coventry T.C.—(a) Roads and sewers, etc.; (b) 323 houses, 64 flatlets and 66 flats at Tile Hill Neighbourhood Unit, Southern section. E. H. Ford, City E. & S., 1a, Warwick-row. Dep. £5 5s.

JUNE 22.

†*Hampshire Police Authority.—Senior Police Officer's house at Highfield-gdns., Aldershot, County A., The Castle, Winchester. Dep. £1 1s.

JUNE 24.

*Ealing B.C.—Renovation and repairs to first-class swimming bath, Longfield-ave. B.E. & S., Town Hall. Dep. £2 2s.
Spalding U.D.C.—Two blocks of 4 flats at St. Paul's-rd. L. A. Gornall, Architect & S., Short-st. Dep. £2 2s.

JUNE 25.

†*Isle of Wight C.C.—Police station and fire station at Shanklin. F. H. Booth (A.), County A., County Hall, Newport. Dep. £3 3s. Tenders by July 18.
†*Staffs. C.C.—County primary school at Walton estate, Stone. A. C. H. Stillman, Architect & S., County Ed. Offices, Earl-st., Stafford. Dep. £4 4s.
†*Staffs. C.C.—Completion of premises at Biddulph Knypersley Girls' County Secondary Modern School. A. C. H. Stillman, Architect & S. Dep. £2 2s.
*Stepney B.C.—Repairs to various properties. Chief Technical Officer for War Damage, 191-193, Commercial-rd., E.1. Dep. £2 2s.

JUNE 27.

*Burnley C.B.—Additional floor at Municipal College. B.E., Town Hall.
Cheadle and Gatley U.D.C.—48 dwellings at Oak-rd., Councillor-la. site. E. & S., Town Hall, Bruntwood, Cheadle. Dep. £4 4s.
*Welwyn Garden City U.D.C.—Plant store and public conveniences. E. & S., Council Offices. Dep. £2 2s.

JUNE 29.

*Chester R.D.C.—One pair of houses at Lea Newbold and one pair at Lower Kinnerton. Douglas Minshull & Co. (L. & A.), 6, Abbey-sq., Chester. Dep. £2 2s.

JUNE 30.

*Berks. C.C.—Three pairs of houses at Langley Hill, Tilehurst. County A., Wilton House, Parkside-rd., Reading. Dep. £2 2s.
*Hampshire C.C.—Primary school at Wallisdean, Fareham. County A., The Castle, Winchester. Dep, £2 2s.

JULY 1.

*Uxbridge U.D.C.—78 houses and 7 shops at Violet Farm estate. William L. Eves (F.), 54, High-st., Uxbridge. Dep. £3 3s.

JULY 4.

*Orpington U.D.C.—Repairs to houses at St. Mary Cray. Valuation and Estates Officer, "The Priory." Dep. £1 1s.
*Sittingbourne and Milton U.D.C.—Eight blocks of 4 two-storey flats at Canterbury-rd. estate. E. & S., Council Offices. Dep. £2 2s.

JULY 5.

*Dartford T.C.—58 houses at Temple Hill Neighbourhood unit, scheme 2B. B.S., Barclay's Bank-chs., High-st. Dep. £ 2s.

JULY 8.

*Malvern U.D.C.—48 houses at Langlands site. S. & Water E., Council House. Dep. £2 2s.

JULY 11.

*Lincoln T.C.—65 flats and maisonettes at Hartsholme estate. City Housing A., Stamp End. Dep. £3 3s.
*Southport C.B.—Public conveniences at Princes Park. B.E. Dep. £1 1s.

JULY 13.

*Darlington C.B.—New primary school and nursery at The Broadway, Eastbourne. Boro' A., Central-bldgs. Dep. £2 2s.

JULY 16.

*Salford T.C.—32 flats and 4 shops at Eccles New-rd. City E., Town Hall. Dep. £3 3s.

NO DATE.

*Hereford T.C.—Block of 30 flats at Hunderton site. City S. Dep. £3 3s.
*Stevenage U.D.C.—42 houses at Grey Dells-rd. G. V. Berry, C., Council Offices. Dep. £2.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

JULY 1.

*New Sarum T.C.—Internal redecoration of Guildhall. City E., The Council House, Bourne Hill, Salisbury. Dep. £1 1s.

"THE BUILDER" PRICES
R.S. JOISTS
The price of R.S. Joists, cut and fitted, has been increased by £3 10s. per ton.

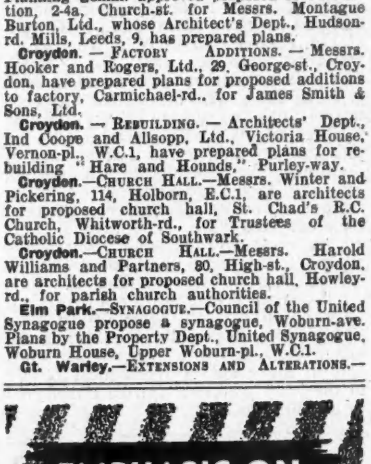
ROADS, SEWERAGE AND WATER WORKS

JUNE 24.

Oldham C.B.—Roads and sewers at Fitton Hall estate. B.E. & S. Dep. £2 2s.

GENERAL BUILDING WORK (LONDON)

Coulsdon.—HOUSES.—U.D.C. received M.H. approval for 10 houses, Woodlands-gr. Plans by Surveyor, Mr. G. Ballard, M.Inst.C.E., Council Offices, Purley.
Cranham.—HOUSES.—Four houses proposed, Cranham-gdns., by Mr. W. S. Brandon.
Croydon.—ADDITIONS.—Messrs. Hugh Macintosh, F.R.I.B.A., and Partners, 33, High-st., Croydon, are architects for proposed additions, 263-279, High-st., for Messrs. C. Collin, Ltd.
Croydon. — RECONSTRUCTION OF PREMISES. — Planning Comm. approved proposed reconstruction, 2-4a, Church-st. for Messrs. Montague Burton, Ltd., whose Architect's Dept., Hudson-rd. Mills, Leeds, 9, has prepared plans.
Croydon. — FACTORY ADDITIONS. — Messrs. Hooker and Rogers, Ltd., 29, George-st., Croydon, have prepared plans for proposed additions to factory, Carmichael-rd., for James Smith & Sons, Ltd.
Croydon. — REBUILDING. — Architects' Dept., Ind Coope and Allsopp, Ltd., Victoria House, Vernon-pl., W.C.1, have prepared plans for rebuilding "Hare and Hounds," Purley-way.
Croydon.—CHURCH HALL.—Messrs. Winter and Pickering, 114, Holborn, E.C.1, are architects for proposed church hall, St. Chad's R.C. Church, Whitworth-rd., for Trustees of the Catholic Diocese of Southwark.
Croydon.—CHURCH HALL.—Messrs. Harold Williams and Partners, 80, High-st., Croydon, are architects for proposed church hall, Howley-rd., for parish church authorities.
Elm Park.—SYNAGOGUE.—Council of the United Synagogue propose a synagogue, Woburn-ave. Plans by the Property Dept., United Synagogue, Woburn House, Upper Woburn-pl., W.C.1.
Gt. Warley.—EXTENSIONS AND ALTERATIONS.—Mr. and Mrs. Denys de Rougemont propose extensions and alterations to farm buildings at "Beredens."
Harold Wood.—DWELLINGS.—Messrs. Southend-on-Sea Estates Co., Ltd., propose 2 bungalows and 4 houses, Gubbins-la. and The Ridgeway respectively.
Hooley.—HOUSES.—M.H. approved 3 pairs s-d. houses, Star-la. Housing Estate. Plans by Mr. G. Ballard, M.Inst.C.E., Surveyor, Coulsdon and Purley U.D.C., Council Offices, Purley.
Hornchurch.—SHOPS AND DWELLINGS.—14 shops with living accommodation above are proposed at Abany-rd. by Marylands Green Estate Co.
Hornchurch.—HOUSES.—Mr. D. J. Cooper proposes 6 houses, Cecil-ave.
Hornchurch.—ENGINEERING WORKS, ETC.—Messrs. Reynolds Production Co. propose engineering works, etc., Jersey House, Queen's Park-rd.
Hornchurch.—EXTENSION.—Printing works extension proposed at Roneo Works, Hornchurch-rd. by Messrs. Roneo, Ltd.
Hornchurch. — PUBLIC HOUSE. — Messrs. Truman, Hanbury, Buxton & Co. propose public house, Squirrels Heath-rd. and Beltinge-rd. junction. T.P. consent received but no plans yet drawn up; site negotiations still in progress. Inquiries, Architect's Dept., Company Offices, 91, Brick-la., E.1.
Hornchurch.—HOUSES.—Messrs. A. E. Coryn & Son, 45, Ardleigh Green-rd., received renewed T.P. consent for 4 pairs houses, Haynes-rd.
Hornchurch.—HOUSES.—Hornchurch Building and T.P. Comm. approved layout plans for 17 houses on sites adjoining Wennington House for Mr. W. Vinten. Architect is Mr. J. S. Broadbent, A.R.I.B.A.; Phœnix Offices, Station approach, Rainham.
Rainham.—MISSION HALL.—Rainham Evangelization Trust, Ltd., propose a mission hall, Rainham-rd.
Rainham.—HOUSES.—Messrs. H. West & Son (Builders), Ltd., have received T.P. consent to 130 houses, Southend-rd.
Sanderstead.—HOUSES.—M.H. approved proposal for 10 houses, Hazelwood-gr. and Leighton-gdns. site for which plans have been prepared by Coulsdon and Purley U.D.C.'s Surveyor, Mr. G. Ballard, M.Inst.C.E., Council Offices, Purley.
Upminster.—BUNGALOWS.—Six bungalows are proposed at The Grove by Messrs. S. H. Lansdell & Sons.
Upminster.—HOUSES.—Messrs. Cripps Bros., Ltd., received renewed T.P. consent for 6 houses, Park-dr.



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(PROVINCIAL)

Ambleside.—Lakes U.D.C. received approval for 54 houses, Greenbank site.
Bacup.—Gaskell & Co. (Bacup), Ltd., Lee Mills, Bacup, Rossendale, propose alterations and additions to warehouse. Plans by A. Brocklehurst & Co., F.R.I.B.A., Martins Bank-chbrs., Waterfoot, nr. Bacup.
Batley.—Messrs. Taylors British Chemists, Commercial-st., propose extensions.
Bedfordshire.—Proposed 1950 sch. bldg. as follows:—Kempston County Prim. Jnr. Sch.; Kingsbrook C.P. Jnr. Sch. (Bedford); Biggleswade Sec. Tech. Grammar Sch. (sec. instalment); Leighton Buzzard C.P. Jnr. Sch.; Flitwick C.P. Sch.; Biggleswade Voluntary Prim. Sch.; Elstow Area Sec. Sch.; Bedford Sec. Tech. Sch.
Billinge.—D.C. seek M.O.H. sanction for 50 houses, Claremont site, at £63,149.
Billingham-on-Tees.—Plans approved for research laboratory, Haverton Hill-rd., for I.C.I., Ltd., and office additions for same firm, Roscoe-rd.
Bolton.—Plans approved:—42 houses, Breightmet-dr., Barnacre-av., Slaidburn-av.; 75 houses, Lever Edge-la. South, for Housing Comm.; layout of site for foundry, Thomas Ryder & Son, Ltd.
Brighouse.—M.H. approved 28 houses, Stoner-la. site; Messrs. J. Tattersfield & Sons, Ltd., propose extensions to works, George-st.; Messrs. A. Graham & Son, Ltd., received byelaw consent for six houses, Clough-la.; Messrs. D. R. Plews, Ltd., propose works extension, Calder-st.; alterations and extensions to "Globe Inn," Rastrick Common, approved for Messrs. J. Stocks & Co., Ltd.; extensions and dairy, Harley Head Farm, Hove Edge, approved for Messrs. Brookes, Ltd.
Bury.—Plans approved:—Alterations, Haymarket-st., for United Cattle Products, Ltd.; layout plan by W. G. Peak for 35 houses, Bramley-dr. and Purbeck-dr.
Cheslyn Hay.—P.C. propose community centre adjoining Mount Zion chapel.
Chesterfield.—B.C. propose 56 houses, Lancaster-rd. estate.
Coventry.—City Council propose 12 temporary shops, Jordan Well, at £10,292.—E.C. propose motor and aero workshop at Technical College at £12,500 and new infants' dept., Green-la. school at £63,250.
Darlington.—Layout plans by Boro' A. (A. E. Tornbohm) for 280 houses and flats on Haughton south site, awaiting approval.
Daventry.—R.D.C. seek loan sanction £111,330 for houses at Charlwelton, Whilton, Long Buckby, Braunston, Woodford Halse.

Didcot.—Wallingford R.D.C. approved plans for new Methodist church and hall, Didcot Broadway.

Droitwich.—T.C. propose 12 lock-up garages, Stalls Farm estate.

Durham.—Mr. C. Elgey, 7a, North Bailey, Durham, is architect for proposed hotel for Messrs. Steel, Coulson & Co., Ltd., Edinburgh.

Durham.—C.C. propose new fire brigade H.Q., Aykley Heads, Durham; new fire stations, Durham, Wheatley Hill, Bishop Auckland, Billingham, Aycliffe and Consett; improvements to fire stations, Felling, Seaham and Stanley. Plans by County A., Mr. G. R. Clayton, Courtla., Durham.

Glenriddling.—Lakes U.D.C. received approval for 20 houses.

Gosport.—B.C. Housing Comm. propose 10 houses, Elmore-rd., Lee-on-Solent; 16 houses, Sharp Jones site, Bridgemary; 4 houses, Bridgemary.—Layout plans for extension, Victory Housing Estate awaiting T.P. approval.—Graviner Mfg. Co. propose factory extension, Fareham-rd., Bridgemary.—Extensions proposed Lee White Laundry, Elmore-rd., Lee-on-Solent.

Hebburn.—U.D.C. obtained land for 700 houses. Architects, T. A. Page, Son & Hill, 75, King-st., South Shields.

Hexham.—R.D.C. propose 22 houses, Stocksfield. Architects, W. Dixon & Son, 1, Collingwood-st., Newcastle.

Heywood.—T.C. approved plans for extensions, Brookfield Mill, Gregge-st., for Brookfield Mfg. Co., Ltd.

Hyde.—T.C. seek M.O.H. sanction for 68 houses and 20 bungalows, Harbour Farm estate.

Linslade.—Bucks County Planning Comm. approved extensions to works for Messrs. Graham (Jute), Ltd.

Liverpool.—City Architect, Dr. R. Bradbury, has prepared plans for reconstruction Walker Art Gallery at est. cost of £30,000.

Macclesfield.—T.C. propose 20 bungalows and 26 houses, Midway site, Poyton.

Manchester.—T.C. approved rebuilding office block for Lonsdale Estates, Ltd., Lonsdale House, Teneriffe-st., Broughton.—P. Frankenstein & Sons (Manchester), Ltd., Culcheth-la., Newton Heath, propose extensions to rubber works. Architects, Cruickshank & Seward, F.R.I.B.A., 16, Princess-st., Manchester.

Middleton.—Lancs E.C. propose sec. sch. at £205,496.

Newcastle-on-Tyne.—City Council received M.H. approval for 107 dwellings, Hindhaugh-st. City A., Mr. G. Kenyon, 18, Cloth-market, Newcastle.

Norham and Islandshires.—R.D.C. to erect 22 bungalows, Cornhill.

Northampton.—Following projects for 1950-51 submitted to Min. Education for approval: Dallington Infants' School (£45,000), Technical High School (part, £80,000). Technical High School (remained, 1951, £70,000), Dallington Junior School (£63,000), Kingsley Infants' School (£45,000), Mereway Infants' School (£45,000).

North Riding.—Home Office approved C.C.'s plans for additional police radio transmitting stations, Danby Beacon and Staxton Wold.

North Riding.—C.C. propose spending £79,000 on fire service buildings and £7,000 on alterations existing buildings; also propose 64 houses on various sites. Plans by County A., County Hall, Northallerton.

Northumberland.—County Education Comm. approved plans for 15 schools, 1950 programme, at £1,845,200. W. W. Tasker, County Architect, County Hall, Newcastle.

Nottingham.—Proposed £1 million expansion scheme for Nottingham University includes new Union building at £450,000. Plans by Mr. T. C. Howitt; also nine halls of residence at £200,000 each, a library, science laboratories, chapel, arts building, schools of music and fine arts, medical school and institute of physical education.

Otley.—U.D.C. to erect 32 North Aspect houses, Weston-la. estate; propose further 24 houses elsewhere; approved plans of offices for Messrs. P. Patrick & Sons, Wharfedale Saw Mills.

Retford.—R.D.C. approved alterations, Ranby House School; office extensions for Messrs. E. Newells & Co., Ltd., Misterton.

Rochdale.—T.C. propose 154 houses, Kirkholt estate, and 30 on various sites.

Salford.—T.C. propose erection of 40 houses, Fairhope housing estate, £43,150; additional 16, Gore-cres. estate, and 8 additional, Eccles Old-rd., Pendleton; nursery sch., Liverpool-st., Pendleton.

Sheffield.—T.C. propose 69 flats, Edward-st. buildings site, £112,400.

Silverdale.—P.C. propose new housing site, Lindeth-rd.

Southport.—T.P. Comm. approved plans for 110 houses, Corporation estates, Balmoral-dr., Heathfield-rd.

Southport.—E.C. to consider plans for extension, Southport Tech. College, at about £109,000.

South Shields.—Mr. J. Wilks, A.R.I.B.A., 72, Sunderland-rd., South Shields, is architect for additions to boys' high school.—P. L. Browne, Son & Harding, Pearl-bldgs., Newcastle-on-Tyne, are architects for alterations, Scala Cinema, Ocean-rd.—Page, Son & Hill, 75, King-st., South Shields, are architects for coach painting shop, Sunderland-rd., for Selwood Garages, Ltd.

Walthwaite (Langdale).—Lakes U.D.C. received approval for 20 houses.

Washington.—U.D.C. (Durham) propose bus station, swimming baths and new council offices. Surveyor, N. Harrison, U.D.C. Offices, Washington, Co. Durham.

Woodchurch.—Birkenhead Corporation propose 2,500 houses, for which the architect is Mr. Herbert Rowse, F.R.I.B.A., Martins Bank-bldgs., Water-st., Liverpool.

TENDERS

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.
¶ Denotes *accepted by H.M. Government Departments*.

Aylesbury.—Houses, for R.D.C.: 10 at Long Crendon, *Pelham & Morris, £13,939; 8 at Brill, *R. & F. Vyles, £11,076; 6 at Chearsley, *P. Moore, £8,500; 4 bungalows at Bierton, *R. Eaton & Sons, £3,899. (Subject to M.H. approval.)

Barnes.—48 flats at Station-rd., for T.C. W. R. Shepherd, A.M.I.C.E., B.E. & S. Quantities by Pritchard, Williams & Hunt: *Tersons, Ltd., 1, Seward-st., Goswell-rd., E.C.1, £69,046.

Belfast.—Houses, for the Corporation: 30 at Glenard estate, *Mooney Bros., Ltd., Belfast, £44,780 5s.; 50 at Glenard, *C. W. Spence, Belfast, £75,776; 28 at Knockland, *Wm. Scott & Co., Ltd., Belfast, £40,978; 48 at Mount Vernon, *Bell & Lewis, Belfast, £64,183; 48 and two blocks of flats at Highfield, *J. Mackey & Co., Ltd., Belfast, £79,497; 70 at Mount Vernon, *Burns & Ferran, Ltd., Belfast, £95,937; 34 at Mount Vernon, *Northern Ireland Constructions, Ltd., £49,044; 100 houses and six blocks of flats at Highfield, *Fortus Constructions, Ltd., Belfast, £172,111.

Belfast.—802 aluminium bungalows, for Corporation Special Housing Committee (including site, works, transport, etc.): *Hawksley, Ltd., £1,163,078.

Brighouse.—Houses, for T.C.: 40 at Stoneyla. estate, *Gibson Bros. (Upton), Ltd., £12,355 (12); *R. Lumb & Co., £17,248 (14); *Gibson Bros. (Upton), Ltd., £16,414 (14); 20 at Caila. estate, *Gibson Bros. (Upton), Ltd., £22,654 (subject to M.H. approval).

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Canterbury.—Houses, for T.C. L. Hugh Wilson (A.), City A.: 42 at Spring-la. site, *George Parker & Sons, Ltd., 112, Northgate-st., Canterbury, £1,285 each; 12 at Spring-la. site, *Wraight & Co., Ltd., London-rd., Sittingbourne, and 76, St. Stephen's-rd., Canterbury.

Cardiganshire.—First instalment of extensions to Secondary School at Tregaron, for E.C. Rhys Jones (F.), County A., County Offices, Aberaeron, Cards.: *Gee, Walker & Slater, 100, Park-la., W.1, £66,280.

Croydon.—Prefabricated classroom block and additions at Gonville School, Thornton Heath, for C.B. C. T. Ayerst (A.), School Architect, 38, High-st., Croydon: *Robert Newton & Co., Ltd., 375, Bensham-la., Thornton Heath, £4,816.

Darlington.—12 houses at Harris-st. and Hewitson-rd. and 2 houses at McMullen-rd.: *J. W. Richardson, Quebec-st., Darlington.

Durham.—Adaptations for canteen at Dorothea Pit, Newbottle: *Wright & Kellett, Ltd., Ashley-ter., Chester-le-Street, Co. Durham.

Durham.—Police houses at various sites, for C.C. G. R. Clayton, County A., Court-la., Durham: *E. Pye & Son, Bishop Auckland, police houses at Eastlea-ave., Bishop Auckland, Louisa-ter., St. Helens, Hall-la., Willington, £18,453; *D. Glen, Ltd., Albert-rd., Jarrow, police houses, Barnwell estate, Penshaw, £4,226; *J. C. Watson, Ltd., Norton, Stockton-on-Tees, police houses, Rift House estate, West Hartlepool, £6,280.

Eastbourne.—20 houses at Chatfield/Davis estate, Hampden Park, for C.B. R. Williams, B.Sc., B.E. & S., 2-4, Saffrons-rd.: *Usher & Martin, Ltd., Gildredge-rd., Eastbourne, £25,852.

Edinburgh.—Research station at West Mains-rd. A. G. Ingram, architect and engineer, Department of Scottish Agriculture, St. Andrews House, Portobello-rd., Edinburgh: Principal contractors for the laboratory bldgs., *Orlit Co., Ltd., George-st., Edinburgh; principal contractors for the ancillary bldgs., *Russell & Co., Ltd., Craiglochart-av., Edinburgh; plumber, sanitary engineering and allied works, etc., *R. Barton & Sons, Ltd., Forrest-rd., Edinburgh; joinery, carpentry and allied works, etc. *Robert Bennie, High-st., Linlithgow, Mid Lothian; plaster, lathing and allied works, etc., *P. Walker & Sons, Ltd., Buccleugh-st., Edinburgh. (Approx. cost £33,000.)

Glendale.—Two houses at Haysheds site, for R.D.C.: *R. & G. Brown (Amble), Ltd., Amble, £3,111 15s. 6d.

Huddersfield.—4 cottages at Digley Holmbridge, for Waterworks Dept. Waterworks E., 24, Ramsden-st.: *R. A. Berry, 62, Dunford-rd., Holmfirth, £5,352.

Lanarkshire.—Reconstruction and additions at St. Andrews Church of Scotland, Bellshill. Cowie & Miller (F.F.), 45, Cleland-rd., Wishaw architects: Building, brick, cement and allied works, etc., *Hugh B. Kerr & Sons, Airdrie; plumber, sanitary engineering and allied works, etc., *R. W. Muir, Ltd., Motherwell; plaster, lathing and allied works, etc., *Hugh MacDougall, Wishaw; joinery, carpentry and allied works, etc., *D. & W. Munro & Co., Wishaw; electrical fittings and installation, etc., *Whyte & Young, Uddingston; slating and allied works, etc., *John Young, Bellshill. (Approx. cost, £11,000.)

Leicester.—Erection of Junior and Infants' Schools at Charnor-rd., New Parks estate, for E.C. J. H. Lloyd Owen, B.Arch. (A.), City A.: *George Calverley & Sons (Contractors), Ltd., Leicester, £101,240.

Leicester.—Alterations and additions to Lero bldgs., for Colleges of Art and Technology. F. Chippindale (F.), architect: *George Calverley & Sons (Contractors), Ltd., £37,370.

¶London (M.O.W.).—Contracts placed by M.O.W. during week ended May 28:—*London*: Admiralty, Whitehall, internal cleaning and painting, Decorative Art Guild, 43, Lower Belgrave-st., Eaton-sq., S.W.1; Victoria and Albert Museum, conversion of gallery into tapestry court, Humphreys, Ltd., 187, Knightsbridge, S.W.7; Admiralty, Queen Anne's Mansions, internal painting and cleaning, Sykes & Son, Ltd., 8, Essex-st., Strand; 19, Hanover-ter., Regent's Park, adaptations and renovations, F. Troy & Co., Ltd., 131, Great Suffolk-st., S.E.1; Patent Office, Chancery-la., internal painting only, Walker-Symondson, Ltd., Braintree-rd., Ruislip, Middx; Western District Parcels Office, Bird-st., W.1, internal painting, C. & T. Painters, Ltd., Mordaunt-rd., Harlesden. *Ches.*: M.O.S. Housing Estate, Alsuger, adaptations to P.A.D. rooms, G. & J. Seddon, Ltd., 55, Duke-st., Fenton, Stoke-on-Trent. *Lancs*: P.O. Garage, Crossley-st., Gorton, Manchester, alterations and adaptations, Jonathon Partington, Ltd., Middleton Junction, nr. Manchester. *Surrey*: Post Office and Telephone Exchange, Mitcham, extensions, Snelling & Rayment, 262, Streatham-rd., S.W.16; Ordnance Survey Office, Chessington, standard huts, J. Jarvis & Sons, Ltd., 12, Buckingham Palace-gdns., S.W.1, *Sussex*: Automatic Telephone Exchange, Preston, Brighton, alterations and additions, McKellarman & Westerman, Ltd., 143, Church-rd., Hove. *Warwickshire*: P.O. Factory, Fordrough-la., Birmingham, new plating shop and scientific labs., Kent and Sussex Contractors, Ltd., 270, Corporation-st., Birmingham.

¶London (War Dept).—Works contracts placed by War Dept. for week-ended May 28:—

Essex: Building work, A. E. Symes, Ltd., Stratford, E.15. *Hampshire*: Painting work, Fields, Ltd., Reading, Berks. *Wilts*: Road work, The Western Trinidad Lake Asphalt Co., Ltd., Bristol 8. *Hampshire*: Miscellaneous work, John Thompson (Wolverhampton), Ltd., Wolverhampton. *Yorks*: Painting work Donald Humberstone & Co., Ltd., Louth, Lincs.

Luton.—24 houses, for T.C.: *Direct Labour, £31,476 (subject to M.H. approval).

Morpeth.—38 Airey houses at Pegswood, for R.D.C. Architects: Mauchlen & Weightman, Saville-row, Newcastle-on-Tyne: *E. Jeffcock (Contractors), Ltd., New Bridge-st., Newcastle-on-Tyne, £50,707.

Northumberland.—Pithead baths installations comprising accommodation and cycle store at Weetslade: *Geo. Wimpey & Co., Ltd., Newcastle-on-Tyne, £56,261.

Nottingham.—Pithead baths installations comprising accommodation, canteen and cycle store at Langton 7 and 8 for National Miners' Welfare Joint Council: *W. J. Simms, Sons & Cook, Ltd., Nottingham, £59,686.

Scottish Special Housing Association, Ltd.—Contracts placed April 15 to May 20.—Site Servicing: Lesmahagow (60 Atholl), Lanark County Road Surveyor, road; Shortlees, Kilmarnock, A. & J. Main & Co., Ltd., Kilmarnock, boundary fencing. House Erection: Dalneigh, Inverness (12 trad.), Duncan Logan (Builders), Ltd., Dingwall, tiled fireplaces; Mill-rd., Bothwell (14 trad.), Loudon & Inglis, Calder-st., Coatbridge, all trades; Rosewell, Midlothian (58 trad.), Alex. Dunn, Ltd., Bothwell-rd., Uddingston, supplying and building in fireplaces; Laighstonehall, Hamilton (106 Weir, 110 trad., 130 Orlit), Hamilton Gas Dept., Hamilton, gas service pipes; Moss-side, Cowdenbeath (20 trad.), the Neuchatel Asphalte Co., Ltd., Glasgow, floor finish; Dalmellington, Ayrshire (12 trad.), Hay & Anderson, Kilwinning, fencing; Patna, Ayrshire (24 trad.), Hay & Anderson, Kilwinning, fencing; Munlochy, Ross-shire (4 trad.), Donald & Fraser, Conn Bridge, roof shingles and roughcast; Poyntzfield, Millbuie, Rossshire (12 trad.), Donald & Fraser, Conn Bridge, roof shingles and roughcast; Sighthill, Edinburgh (2 Bellrock with brick exteriors), Calum Grant & Partners, Ltd., Macmerry, Tranent, steel roof trusses; Townhead, Coatbridge (100 Hilcon, 100 Whitson-Fairhurst), Jas. Laidlaw & Sons, Ltd., Glasgow, fencing; Plean, Stirlingshire (11 trad.), Alexander & Son, Belford-rd., Edinburgh, hand railings; Danderhall, Midlothian (60 trad., 100 Atholl), James Strang & Son, 48, Bellevue, Polmont, garden fencing; O'Wood, Holytown (100 trad., 6 Bryden), Hugh Broadley, Ltd., Glasgow, garden fencing; Gatesite-rd., Galston (62 trad.), Hay & Anderson, Kilwinning, garden fencing; Shortlees, Kilmarnock (554 various), Hay & Anderson, Kilwinning, garden fencing; Watling-st., Motherwell (278 various), A. M. Tweedie & Co., Ltd., 44-52, Bilbao-st., Glasgow, fencing; Carfin-st., New Stevenston (34 Weir, 32 Atholl), James Strang & Son, Polmont, garden fencing; Sighthill, Edinburgh (2 Bellrock with brick exteriors), Boyne, Smith & Wyllie, 22, Nelson-st., Edinburgh, electrical work; Toryglen, Glasgow (192 Weir), A. M. Tweedie & Co., Ltd., Glasgow, garden fencing; Rosshall, Glasgow (194 Weir), A. M. Tweedie & Co., Ltd., Glasgow, garden fencing; Sighthill, Edinburgh (2 Bellrock with brick exteriors), Scottish Orlit Co., Ltd., Edinburgh, all trades.

South Shields.—20 houses and 16 old people's bungalows at Centenary-ave., for the T.C. Lt.-Col. John Reid, B.E.: *William Leech, Ltd., 2, Clayton-st., Newcastle-on-Tyne, £37,724.

Southwick.—16 houses at Highdown section of Ridgeway housing scheme. E. A. Coates, M.I.Mun.E., E. & S., Town Hall: *T. L. Beamish, 123, Gardner-rd., Fishergate, Sussex, £21,380.

Stratford.—Maintenance repairs and war-damage repairs to warehouses and workshops, for Bouts-Tillotson Transport (B.T.C.), Ltd.: *H. L. Bird, Ltd., Hainault-st., Ilford, Essex.

Sunderland.—Adaptations at Inland Revenue Offices, Gray-rd.: *Snowdon Bros., Ltd., Belford-rd., Sunderland.

West Ham.—14 houses at Tarling-rd., for C.B. Thomas E. North (F.), Boro' A. and Planning Officer, 70, West Ham-la., E.15: ‡County Borough of West Ham, Works Dept., Town Hall, E.15, £19,215 (subject to M.H. approval).

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